

On-Time Graduation Rates in a Suburban Secondary School: A Mixed-Methods Study

Examining Factors that Impact Student Academic Achievement and Graduation

by

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Dedication

This dissertation is dedicated to those people who inspired me to reach for the stars. First to my family, the most important thing in my life. Ross, you have had unconditional faith and love for me throughout this process. You believed in me when I did not always believe in myself. Thank you for holding my hand and reminding me often that this is just the beginning. Lucy, Sam, and Aggie, you have each inspired me every step of the way and shown me what it takes to reach my goals through your continuous abilities to face challenges head on! Thank you to my parents Bjoern and Diane, you have never wavered in your support for academic scholarship and intellectual growth, I hope that I have made you proud. And finally, to my very best friend Angela, my personal cheerleader, who sat through hours of conversation to get me to the finish line. I love each of you dearly, you are my forever support team!

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Abstract

To determine what factors impact on time graduation rates, this study used a mixed-methods approach to investigate teacher perspectives regarding the level of impact extraneous variables have on student academic achievement. The study utilized a survey to determine which factors impact on-time graduation rates in a four-year cohort. The survey employed both quantitative and qualitative questions to establish which systems most significantly impact student academic success.

Data collected showed that students in a secondary suburban school are most impacted by factors linked to Bronfenbrenner's Ecological Systems Theory (1979), specifically in the Microsystem and Exosystem. Conversely, the teacher's perspective rated the Mesosystem and Macrosystem as having significantly less impact on a student's ability to graduate on time in a four-year cohort. As public educators continue to address student growth, it is crucial to utilize data to implement programs that target the most impactful factors.

Keywords: on time graduation, Bronfenbrenner's Ecological Systems Theory, school leadership, education reform, No Child Left Behind, Every Student Succeeds Act

Chapter One: Introduction

This research study uses a parallel mixed-methods study designed to determine teacher perspectives on the variables that impact on-time graduation for secondary students in a suburban school district. Chapter One includes sections that identify the purpose and rationale for the study, current solutions, research questions, and limitations. It also examines key components of the law to assist the reader in obtaining a full understanding of the study.

Purpose and Rationale of Study

The Michigan Department of Education (MDE) (2015) has established on-time graduation as a long-term goal through the *Top 10 in 10 Years Strategic Plan*. Education stakeholders comprised of the State Board of Education, students, parents, educators, administrators, local districts, and intermediate school districts throughout Michigan established on-time graduation as a goal necessary to the meaningful engagement of students through evidence-based approaches. The *Top 10 in 10 Strategic Plan* (MDE, 2015) fulfilled the state accountability plans required by the United States Department of Education through the *Every Student Succeeds Act* (U.S. Department of Education, 2015), otherwise known as the *ESSA*. The *ESSA*, a federal law which took effect on December 10, 2015, requires states to take authority and accountability, enacting specific state identified strategies to address identified accountability measures.

The Michigan Department of Education calculates the number of public high school students who graduate on-time utilizing the Adjusted Cohort Graduation Rate or ACGR. (National Center for Education Statistics, 2019) The ACGR graduation cohorts are established through identification of first time ninth graders in a specific graduation year. According to the National Center for Educational Statistics (2019), the ACGR provides for adjustment of established cohorts based on student losses and gains that occur due to transfers, emigration, and death. The ACGR provides data related to the number of students who graduate in a four-year cohort with a regular high school diploma. According to the National Center for Educational Statistics (2019), the ACGR data was instituted by the United States Department of Education in the 2010-2011 school year.

Since the initial collection of ACGR data in 2010-2011, the rate of on-time graduation for public high school students has experienced an overall increase. The National Center for Educational Statistics (2019) cites an approximation of 6% growth over the first 7 years of data collection with over three-quarters of states reporting unrounded graduation rates of 80% to less than 90%. While the rate of on-time graduation has demonstrated an overall statistical increase, there are subgroups within the dataset that continue to lag (National Center for Educational Statistics, 2019). These subgroups include, but are not limited to Black, Hispanic, American Indian/Alaskan Native, Students with Disabilities, Limited English Proficient, and the Economically Disadvantaged.

According to MDE (2021), Russell High School, the focus of this study, is no exception to the continued lag in on-time graduation for identified subgroups. On-time graduation at Russell High School has steadily declined since the 2015-2016 school year according to MI School Data (2021). The overall graduation rate index has declined a total of 6% between the graduation years of 2016-2017, 2017-2018 and 2018-2019. Overall, Russell High School falls below on-time graduation rates for both the average of similar schools and the state average.

Current Solutions

The Michigan Department of Education, through the implementation of the *Top 10 in 10* (2015) has put into effect the *Multi-Tiered System of Support* or *MTSS*, as a strategic framework to guide school districts. According to MDE (5/2018), *MTSS* was implemented with the following essential components: team-based leadership, tiered delivery system, selection and implementation of instruction, intervention and support, comprehensive screening and assessment systems, and continuous data-based decision-making. These components have been put in place as a guide for school districts in Michigan to meet the goals set forth by MDE. The *Top 10 in 10* (2015) is currently the roadmap for Michigan schools with MI School Data used as a database for school districts to assess growth and/or decline.

Russell High School, the focus of this study, is located in a suburban school district in the Southeast Michigan metropolitan area. According to MDE (2019) approximately 760 students attend Russell High School in grades 9-12 with a student-teacher ratio of 22:1. The MDE (2021) defines graduation rate as the percent of students graduating from high school within their

established four-year cohort. According to MI School Data (2021), Russell High School experienced a 5% annual decline in the percentage of students graduating from 80% in 2016-2017 to 70% in 2018-2019.

If the Russell School District does not examine the causal factors for a depressed graduation rate, it will be unable to increase overall on-time graduation districtwide. The continuum of services implemented at the secondary level for students should coincide with those factors that most significantly impact on-time graduation. To gain insight into this phenomenon, this study will employ a mixed-methods approach in an attempt to establish teacher perspectives on what variables impact on-time graduation at Russell High School.

The overall relevance to education is the continued phenomenon of suburban students who are unable to attain on-time graduation at the secondary level. If this problem continues to pervade suburban school districts, such as Russell, it may perpetuate a cycle of poverty and low income as students are more likely to face challenges to adult and community transitions.

Purpose of the Study

The purpose of this study is to examine variables that impact on-time high school graduation for students in a suburban school district. Mixed-method research methodology will be used to gather qualitative and quantitative data. With this data, I will determine if there is a relationship associating specific extraneous variables to on-time graduation. The specific variables that will be used include the following: on track attendance, state testing proficiency, disciplinary action, and credit earned in 9th grade English Language Arts and mathematics,

family, peers, cultural group, school of choice, local economy, and overall safety. Data will be collected from three school years, 2016-2017, 2017-2018 and 2018–2019.

I will analyze the data and further provide interpretation of relationships amongst the variables employing Bronfenbrenner's Ecological Theory. This theoretical framework will be utilized to identify the variables consistent with on-time graduation at Russell High School through a sociological lens. Using Qualtrics as a survey tool, I will identify associations using both qualitative and quantitative research methods. This study will be unique because it will provide mixed-methods research that may have future impact on how academic and support programming for secondary students in a suburban school district addresses these variables and develop further interventions.

Qualitative research will be used to gain insight into the experiences and perceptions of the educators that work with students at Russell High School. An electronic survey will be employed to gather data based on the research sub-questions. Analysis and interpretation of responses will be utilized to develop further understanding of the relationship of specific variables that impact on-time graduation for suburban students.

Quantitative research will be used for data collection, analysis, and interpretation to further understand the relationship of specific variables that impact on-time graduation for suburban students. Data will be analyzed to ascertain relationships amongst variables and on-time graduation over a three-year period. The interpretation of data will further elicit if there is an association amongst the variables and on-time graduation.

Qualitative and quantitative research will be utilized to answer the fundamental question: What variables impact on-time graduation for students in a suburban school district. Sub-questions addressed by the research study will include the following:

What variables impact on-time graduation for students in a suburban high school?

- a. Do state assessments predict on-time graduation for students?
- b. Does on-track attendance impact on-time graduation for students?
- c. Does credit earned in 9th grade English Language Arts impact on-time graduation for students?
- d. Does credit earned in 9th grade mathematics impact on-time graduation for students?
- e. Does membership in a subgroup impact on-time graduation for students?
- f. Does disciplinary action impact on-time graduation for students?
- g. Does school of choice enrollment impact graduation for students?
- h. Does a student's outside community impact on-time graduation?

Limitations

This research study is limited as it is dependent on information from MDE as delineated in MI School Data. The information reported to the state educational agency is completed by local educational agencies and may not be completely accurate based on time of reporting, reporting procedures, and staff training. Furthermore, the sample size utilized to complete this research study is small due to the size of Russell School District. Further research may be

necessary to determine if the study is applicable to a wider population of students attending suburban school districts.

Conclusion

This chapter provided an overview of a study in a suburban school in Southeast Michigan metropolitan area. A summary of the study's purpose and rationale, current solutions and an explanation of the study's significance have been provided. Chapter Two will provide a review of relevant literature which is necessary for further understanding of the study and its research questions.

Chapter 2: Literature Review

Introduction

This chapter will review literature related to the factors that impact graduation rates in a suburban high school. It will begin with a historical overview of education reform at the national and state level. Education reforms have steered graduation rates as a measure to determine the overall viability of secondary schools in the United States. This dissertation will focus on identifying which factors have the greatest impact on high school graduation rates for suburban students. Bronfenbrenner's Ecological Systems Theory will be used to analyze the factors established within the literature and will provide insight into how suburban schools can provide support to increase high school graduation rates.

Historical Overview

Foundations of equality, equity, and excellence in education culminate in a statement made in 1965, by then President Lyndon B. Johnson, “I believe deeply no law I have signed or will ever sign means more to the future of America.” (Johnson, L.B.,1965). *The Elementary and Secondary Education Act of 1965* (ESSA) changed American education and extended the principles and opportunities of learning to all students (U.S. Department of Education, 2017). Changes in American education have provided inclusion of all students, but there are still areas in our system creating barriers to education.

Racial Desegregation

The *ESEA* (1965) was preceded by the landmark case *Brown v Board of Education of Topeka, Kansas* (1954), a case that challenged equality, desegregating American schools, and furthering the pursuit of civil rights across the nation (Russo et. al., 1994). The desegregation of schools, because of this ruling, brought inequalities in American education to the forefront and served as an impetus for change. A decade later, *ESEA* provided American students with federal assurances that the states would provide a quality education. The *ESEA*, instituted specific grants and funding that were extended to low-income students and included resources to improve the overall quality of education.

The context of quality education, prompted by the *ESEA*, served as a catalyst to ensuring an equitable education to all American students. McPherson (2011), challenges that American schools continue to struggle with equality and equity through educational reforms since *Plessy v. Ferguson* (1896) elicited the doctrine ‘separate but equal’. Educational equality has taken on notable change through the last seven decades as globalism has become deeply seeded in American culture. The need to transform, beginning with *ESEA*, has ignited historical reformations in education that focus on providing civil rights, equitable resources, and an education designed to be competitive in a global economy. Ervay (2016), counters that educational reform will require additional wraparound and support services to attain equality and equity, especially in vulnerable communities. According to Johnson, Simon and Mun (2014) effective support services such as peer mentor programs can increase graduation rates as demonstrated in their research with Latino males in high school.

Education Reform

Transformation in education has not occurred without debate or controversy. As made public in the 1983 report, *A Nation at Risk*, President Ronald Reagan's National Commission on Excellence in Education purported the challenges that education faced in a global economy (National Commission on Excellence in Education, 1983). *A Nation at Risk* revealed to the American public the need for educational reform affirming that education, at that time, was not preparing students for competitiveness in a global economy. Good (2010), suggested that *A Nation at Risk* brought to the forefront the necessity of educational reform and was intended to evoke excellence in our nation's schools.

A Nation at Risk prompted awareness in the American people, however, there were multiple factors that impacted the overall effectiveness of the report. According to Good (2010), the report did not have a substantial impact directly on educational practices in America; however, it did create a political platform for further examination. Ten years after *A Nation at Risk* was published, it was refuted by the *Sandia Report* (1990) published by Sandia National Laboratories, although this report did not incur political momentum, it did provide educational data that disproved declining trends in American education. Preceding the publication of *A Nation at Risk* educational reform in America had foundational roots in the passing of *ESEA*. Between 1964 and 2015, the *ESEA* has been reauthorized six times and has served as the impetus to educational reform in our nation.

Reaching Equal and Equitable Standards

The *ESSA* currently in its sixth reauthorization, is referred to as *Every Student Succeeds Act* (U.S. Department of Education, 2015). A steadfast law in educational reform, *ESSA* continues to address equality and equity in schools across the United States, however, there have been several reauthorizations that led to the law in its current form. *No Child Left Behind* (U.S. Department of Education, 2001), also known as *NCLB*, replaced the *Improving America's Schools Act of 1994*. The *NCLB* (2002) addressed educational reform through specified mandates on public educational entities across the United States. With the exposure of achievement gaps, the pendulum continued to swing, emphasizing what some considered the ineffectiveness of public education which can be paralleled to the release of *A Nation at Risk* (1983). Strict federal regulations, to reform education, were enforced within the states. *NCLB* set precedent in educational reform by initiating the closure of achievement gaps and significant increases in student achievement rates. "Obama granted flexibility to this law in exchange for rigorous and comprehensive state-developed plans designed to close achievement gaps, increase equity, improve the quality of elementary and secondary education" (U.S. Department of Education, 2015, p. 1). With the progression of *NCLB*, consequences ensued if states were not responsive and local districts were not effective. Promulgating change in every classroom, for every learner, at a rate with which to achieve full proficiency standards was the driving force of *NCLB*. There were gaps in the data collected during the tenure of *NCLB*, it defined high school graduation rates using "only students who receive a regular standards-based diploma on time with their class should be counted as high school graduates" (Swanson 2004 p. 1).

NCLB (2002), was reauthorized in 2015 and renamed *Every Student Succeeds Act*, commonly referred to as *ESSA* (2015). *NCLB*, with a thirteen-year tenure, mandated historical changes in accountability for American students. Historically, *ESEA* (1965) was enacted as a federal law to ensure equality within schools across the nation. Transformation of the *ESEA* (1965) has occurred through the following amendments and reauthorizations: *Elementary and Secondary Education Act* (1965) (1966), *Education for all Handicapped Children* (1975), *Individuals with Disabilities Education Improvement Act* (1990) (1997), *No Child Left Behind Act* (2002) (2004), *Individuals with Disabilities Education Improvement Act* (2004), and currently *Every Student Succeeds Act* (2015). “ESSA was passed by wide margins in Congress (Senate 85 to 12, House 359 to 64) to ensure greater State and local flexibility. Zinskie and Rea (2016), support the changes that *ESSA* (2015) made and support a comprehensive approach to students who are at-risk behaviorally and academically.

Michigan Department of Education

Educational reform has been supported by business groups, teachers’ unions, civil rights groups, and supporters of school choice (MDE, 2015). Passed with bipartisan support, *ESSA* was designed to promote equality, equity, and excellence through high standards while providing each State with the flexibility to enact educational accountability within local districts. Upon the commencement of the 2017-2018 school year, *ESSA* took effect. States’ education agencies were impacted by the U.S. Department of Education’s limited involvement in education. The *ESSA* “Rolls back much of the federal government’s big footprint in education policy, on everything

from testing and teacher quality to low performing schools. It gives new leeway to states calling the shots.” (Klein, 2016, p. 1) With greater flexibility, as supported in the *10th Amendment*, each State has been charged with developing goals to promote student growth proficiency, English language learners, and graduation rates.

Each of the States currently operate independently under the *ESSA* while the federal government continues to provide funding to ensure educational quality. The Michigan Department of Education distributes funding to educational entities through federal and state sources. The State of Michigan realigned school funding through the passage of *Proposal A* (Office of Revenue and Tax Analysis, Michigan Department of Treasury, 1994). Until this time, provision of quality education had resided in local control; however, funding was taken over by the state, giving legislators the power to control funding as opposed to local communities. According to Pratt-Dawsey (2014), there were three notable changes in education funding that took place with the passage of *Proposal A*: the elimination of the use of local property tax, increased sales tax to support the school aid fund, and funding to close the gap for low funded schools. *Proposal A* did not achieve the goal of closing the funding gap in Michigan, in fact, its antiquated design exacerbates state control on local communities perpetuating the process of weighing the cost of employees to programs in public education. With the passage of *ESSA*, financial support from the federal government is embedded to support Michigan’s strategic plan *Top 10 in 10* (MDE, 2015). Although funding remains a significant factor, educational reform in its current form takes an approach meant to create equality, equity, and excellence through high standards.

With responsibility on the states, the federal government has put into action safeguards to ensure a quality education for all American students. “The Department worked to ensure that the revised template is structured to promote innovation, flexibility, transparency, and accountability and to reduce burden, while maintaining essential protections for all students” (U.S. Department of Education, 2017, p. 2). State educational agencies are required to develop a consolidated state plan which requires consultation and approval from both the secretary of education and the state’s governor. The *ESSA* (2015) elicits the responsibility to provide quality education to the states whose values pertaining to education resonate both within funding calculations and the development of a consolidated state plan. There are variations specifically aligned to the “regulations that were repealed by Congress required specific data and information regarding how low-income and minority students in Title I, Part A schools are not served at disproportionate rates by ineffective, out-of-field, and inexperienced teachers” (U.S. Department of Education, 2017, p. 2). The Council of Chief State School Officers (CSSO) and the National Governors Association (NGA) in tandem work with the state title directors to ensure that state consolidated plans provide written assurances to the Secretary of Education, the role assigned to Betsy DeVos, who oversaw *ESSA* (2015). Michigan has addressed this challenge through a strategic plan, *Top 10 in 10 Years*, as implemented by Brian Whiston, former State Superintendent of Schools, in November of 2015.

Top 10 in 10 Years

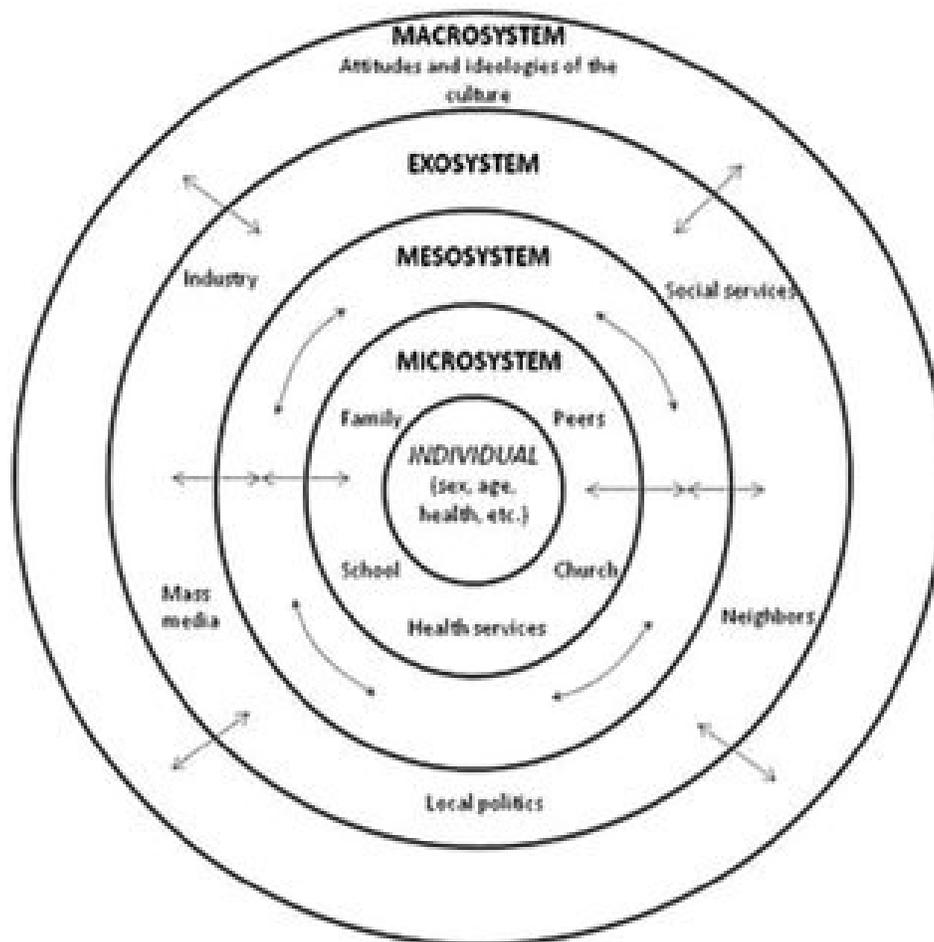
According to the Michigan Department of Education, the current consolidated state plan, *Top 10 in 10 Years* (2015), has been designed to make Michigan a premiere state in education. Goals and strategies have been implemented to support a competitive edge in education. State educational agencies work to draw an increased population to the State of Michigan. The goal is to do this through a globalized approach that increases the efficacy in which education is delivered. Michigan's *Top 10 in 10 Years* focuses directly on goals and strategies within the following categories: Early Learning, Engagement, Effective Educators, Equity, and Exit Ready (MDE, 2015, p.4). The *ESSA* has relinquished both responsibility and accountability to the states in the provision that each student has a quality education. A top-down approach is still in place transferring from the federal to the state level as states must consider educational leadership, curriculum and instructional practices, metropolitan education, special education, and research methodologies in the quest to provide a quality education. Local school districts must ensure equality, equity, and excellence through instructional practices as they strive to meet both federal and state mandates.

Every Student Succeeds Act (2015) and Michigan's *Top10 in 10* (2015) address Bronfenbrenner's (1979), Ecological Systems Theory through concentration in the systems that impact students at-risk behaviorally and academically. The educational reforms, both at the federal and state level aim to empower educators in the implementation of systems that support evidence-based practices while addressing the needs of students. There have been challenges, from federal and state agencies, that these reforms will not be enough to close gaps amongst students within marginalized groups (Cramer et al., 2017); (MDE, 2015); (U.S. Department of

Education, 2017). The *Individuals with Disabilities Education Improvement Act* (U.S. Department of Education, 2007) in partnership with *ESSA and Top 10 in 10* are designed to decrease the precipitating factors and create roadblocks to on-time graduation for suburban students.

Factors that impact on-time graduation

Employing Bronfenbrenner's Ecological Theory (1979) with the current literature regarding the performance of students in suburban schools, it is evident that there are significant factors that undermine the attainment of on-time graduation. These factors are embedded within each of the systems of the theoretical framework. Ecological Theory frames the systems that impact a human being, this model can be applied to students at the high school level. Figure 2.1 is a visual representation of the ecological systems with the corresponding environments that are influenced within each layer. Ecological Theory applies to the school environment focusing on the whole student and what directly impacts learning and the overall outcomes of K-12 education.

Figure 2.1*Bronfenbrenner's Ecological Systems Theory (1979)*

Note. The figure represents ecological systems theory within the context of educational environment. The figure illustrates the second revision to ecological systems theory (Bronfenbrenner, 1977). Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American psychologist*, 32(7), 513. (<https://doi.org/10.1037/0003-066X.32.7.513>).

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According to Hazel et al., attendance, behavior, and course performance are the predictors of on-time graduation (Hazel et al., 2014). Hazel et al. expands the systems that have significant impact by suggesting that rapport, supports, accommodations and modifications also have considerable influence over a students' overall ability to reach on-time graduation (p. 401). The factors identified by Hazel et al. are within the context of Bronfenbrenner's Macrosystem, Exosystem, and Mesosystem (1979), each system is an extension of the individual child and influences him/her either directly or indirectly. Ecological Systems Theory (1979), when applied to education, gives a better view of what specific factors impact academic achievement. Measurement of academic achievement and successful completion of high school is one way of tracking graduation rates in communities across the nation.

There have been numerous studies that investigate the factors that impact on-time graduation for secondary education students. Freeman and Simonsen (2015) specifically address the community's role in students' lives, as well as the poverty level they identify with as the most significant contributing factor to impact on-time graduation as well as overall high school completion (Freeman & Simonsen, 2015). Prevention programs have been used in numerous studies to identify the primary factors that impact high school graduation. Mac Iver (2011) completed a 5-year randomized study that focused on a dropout prevention program in two secondary suburban high schools. The findings in this research emphasized the need for intervention to occur prior to high school to be most effective. While early intervention is a common thread within the literature, there is also a significant relationship made within the research to ecological systems. Alivernini and Lucidi (2011) support Ecological Theory by

focusing on the concepts of both self-determination and adult support as determinants of high achievement.

The literature on pre-secondary interventions is less consistent overall. Therefore, a prominent issue in the current literature that will impact future research is what specifically can be identified as factors that impact on-time graduation that can be addressed by secondary educational institutions. According to Freeman and Simonsen (2015) the most significant factors that predict on-time graduation are “academics, behavior, and attendance” (p. 241). Utilizing these commonly applied predictors, the review of literature connects the interrelationship of these factors are significant to this research. Martinez and Sparks (2018) consider this concept from a population lens and focus on the idea of legacy neighborhoods as a significant factor in the overall graduation rate of students in suburban high schools.

These clusters limit the number of positive role models, positive peer group influences, and school resources available to children due to lower tax revenue generated by lower property values. Over time, neighborhoods with less economic and social resources become less desirable, which affects the ability of the neighborhood to attract and keep higher educated and better-resourced individuals. (Martinez & Sparks, 2018, p. 422)

Martinez and Sparks use a broader perspective which focuses on the Exosystem as the most influential factor in high school graduation rates creating a wide variation of potential factors of impact.

Absenteeism

Review of current literature suggests that absenteeism is a significant indicator of on-time graduation. Stout and Christenson propose that factors such as absenteeism, either through school refusal or suspension, are precursors to a gradual process that causes school disengagement. Furthermore, Stout and Christenson (2019) identify absenteeism as an ‘alterable factor’ as it is highly influenced by the student, parents, school personnel and community. Ecological Theory identifies the systems named by Stout and Christenson (2009) and supports the significance of external systems such as the Microsystem, Mesosystem and Exosystem in a student’s disengagement in school, which may lead to failure to graduate on-time.

Balfanz & Byrnes (2012), identify that chronic absenteeism has a significant impact on a student’s ability to graduate on time. Lyon and Cotler (2009), suggest that Ecological Theory, specifically the Exosystemic, Mesosystemic, and Microsystemic levels impact a student’s attendance. These systems, directly connected to the systems that influence a system such as those suggested by Scott (2016) indicate that absenteeism leads to a student’s eventual inability to graduate on-time has deep roots in factors over a period of time. Balfanz and Byrnes (2012) support this research adding that “chronic absenteeism is most common among low-income students” (p. 5). Positive support of systemic groups may work directly in support of school

intervention programs; a student's associations have a vast impact on the belief that school is of value. Research suggests that disconnection amongst students and school is impacted and results in such factors as absenteeism that can potentially impact on-time graduation.

Academic Performance

"Chronic absenteeism begins to rise in middle school and continues climbing through 12th grade, with seniors often having the highest rate of all" (Balfanz & Byrnes, 2012, p. 5). As student attendance gradually decreases, a correlation between the decrease in academic performance and overall attainment of credits to graduate on-time decreases simultaneously. Gottfried (2014) supports this through research that shows both reading and math performance decreases as attendance decreases. Ecological Theory supports this concept as students' level of academic performance drops, engagement in the Exosystem, Mesosystem and Microsystem levels drop. Existing literature from Rafa (2017) associates political policy, specifically *Every Student Succeeds Act* (U.S. Department of Education, 2015) as quality of school success.

The association between chronic absence, academic performance, and on-time graduation is significant as one relates to the effectiveness of the next. Specifically, if a student is chronically absent, as defined by the United States Department of Education as missing 15 days (about 3 weeks) of school, it is inherent that academic performance will drop due to 112 hours of missed instruction. Leading to missed academic requirements and opportunities for engagement, the U.S. Department of Education refers to "a hidden educational crisis" (U.S. Department of Education, 2019 p. 2). Lesnick et al. (2010), challenges these findings reporting that "ninth grade

reading level is not a predictor of on-time graduation nor of dropout rate” (Lesnick et al, 2010, p. 27).

According to Lee and Chung (2015), the impact of low success rates in education is detrimental, not only to students and their livelihood, but also to society as a whole. Hazel et al. (2014), supports that a ‘wait and see’ approach to learning and success is not efficient and leads to further decline in behavioral and academic growth. It is clear in the research literature that the impact of not graduating from high school on-time has drastic effects on individuals, communities, and society. The overall impact, according to Swanson (2004), is that students who do not graduate on-time often “suffer repercussions economically and socially that impact future success” (p. 5). Swanson reports that “poorly educated communities experience disproportionately high rates of unemployment, crime, incarceration and dependency on public aid” (p. 5) State assessments given in high school are one part of finding which communities may fall into the range of an elevated level of non-proficient students.

On-time Graduation

The research literature that has been reviewed refers to early warning systems as an approach that fluidly identifies at-risk students so that schools may step in using preventative measures. Neild et al. (2007) encompasses early warning systems as “student distress signals,” finding that risk factors such as attendance, academic performance and behavior are key elements in the prediction of on-time graduation rate and/or high school dropout. (Neild et al., 2007, p. 30) Researchers, though varying in identifiable age-groups, as well as grade level, focus

on 8th and 9th grade as the level in which risk-factors have the strongest correlation. Identifying which students are at-risk may be crucial in the manner with which schools across the country address on-time graduation as well as dropout rates.

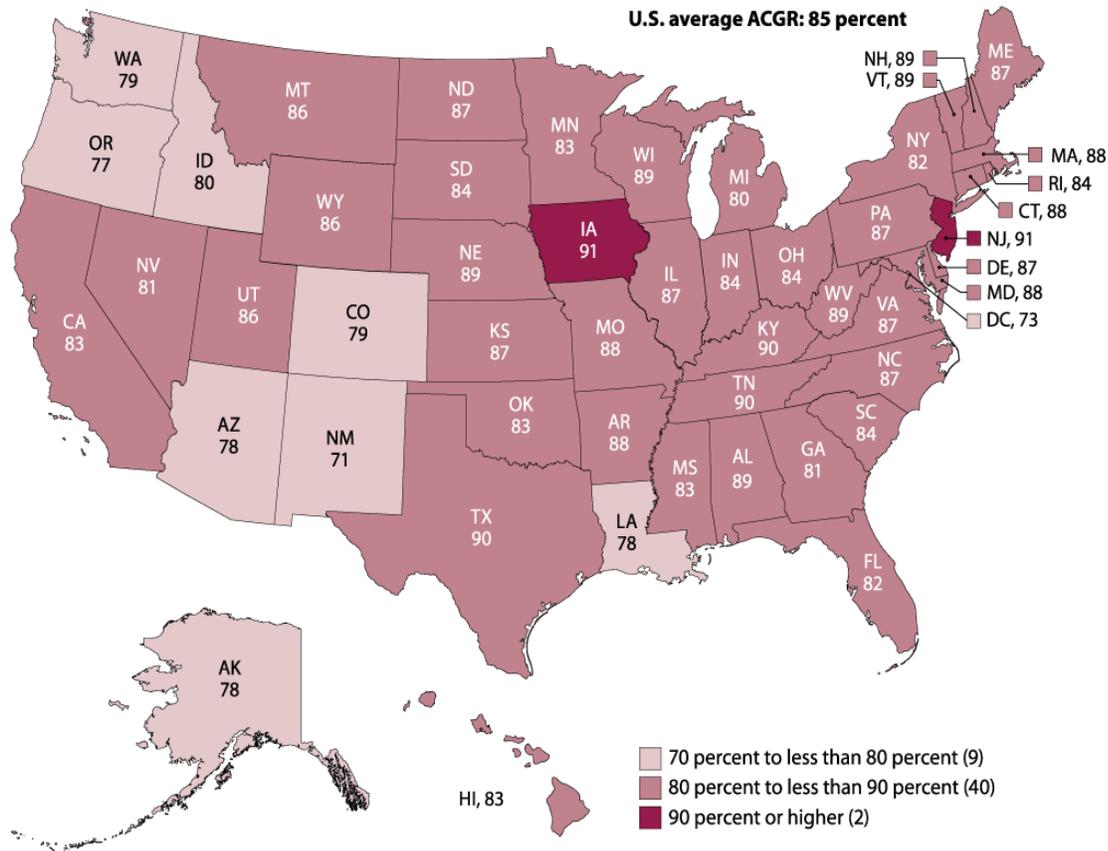
There has been speculation that high school dropout rates have been skewed in decades past for a variety of reasons. Swanson (2004) identifies what researchers have always suspected, that significant numbers of high school dropouts are not counted creating a distorted view of what may seem like a new crisis. Furthermore, this literature has been supported by researchers such as Murnane (2013) who utilized evidence to show patterns in graduation rates in U.S. high schools between the years 1970 and 2010. Murnane identifies that existing data does lend to trends and patterns including gaps in race, gender, and income. In the measurement of graduation rates, a variety of measurement tools have been employed over the last fifty years. According to Fossey (1996), urban school districts have implemented practices in the past that skew graduation data, creating a challenge in comparable data resources. Fossey further identifies that establishing on-time graduation historically would be unreliable as districts across the nation have used a variety of measures including GED recipients to increase graduation rates annually.

In the United States, most states use the adjusted cohort graduation rate (ACGR) to find how many students are graduating with a high school diploma within their ninth-grade cohort in four years. According to the National Center for Education Statistics (NCES) (2019), this method of calculation which results in a precise graduation rate has become more widely used in recent years. In prior years, the adjusted freshman graduation rate (AFGR) was used, the NCES

reports that there is forty years of data using this measurement tool. In Figure 2.2 each of the states' ACGR is represented on the map of the United States. National graduation rates from 2017 show most states in the 80-90 percent range, this includes the state of Michigan which reported 80%. Ultimately, Figure 2.2 demonstrates where Michigan education ranks amongst other states in the nation which is depicted as a low average graduation rate.

Figure 2.2

U.S. Department of Education, Office of Elementary and Secondary Education, Consolidated State Performance Report, 2016–17



Note. This figure represents the average of adjusted cohort graduate rate for each state in the United States through the school years 2010-2011 to 2016-2017. U.S. Department of Education, National Center for Education Statistics. (2018). Table 219-46: Public high school 4-year adjusted cohort graduation rate (ACGR), by selected student characteristics and state: 2010-11 through 2016-17. (https://nces.ed.gov/programs/digest/d18/tables/dt18_219.46.asp).

The Center for Educational Performance and Information, otherwise known as CEPI, calculates graduation rates in the State of Michigan by using cohorts to delineate and ensure that accountability measures are supported. (MDE, 2021) This process sustains credibility through utilizing data and records from local school districts, intermediate school districts and CEPI to account for each individual student enrolling in the ninth grade. According to MDE (2021), the four-year “on-time” graduation rates have supported the rigorous standards of the National Governors Association Graduation Counts Compact and has been adopted as an accountability measure by the Michigan Department of Education. Upon completion of accountability, CEPI transfers information to MI School Data in which data becomes available for review by the state, intermediate school districts, local school districts and parents. According to Leeds (2018), 2016-2017 was the first school year that graduation rates rose above 80% in Michigan. Comparably, this is a significant increase from decades prior, which according to Greene and Winters (2006a) hovered at around 70%.

Greene & Winters (2006) report that “78 percent of white students and 72 percent of Asian students graduated with a regular diploma in the class of 2003, compared with the much

lower estimates of 53 percent for Hispanic students and 55 percent of African-American students.” (p. 18) DeGrow (2018) counters the current process through his publication in the Mackinac Center for Public Policy, *Here’s One Way Michigan Miscalculates Graduation Rates*. DeGrow identifies that school mobility rates are skewing the most recent on-time graduation rate data. This process is identified as reporting inaccuracies due to the movement of students from district to district and the challenges that arise when students are credit deficient. DeGrow suggests that the only accurate measurement can be reached by utilizing a cohort with only students who attend the same high school for four continuous years.

Fossey (1996) confirms through literature that this is an issue that began far before the data we utilize today was established. The literature and research reflect a systemic change in graduation rate calculation across states and districts. Fossey suggests that significant accountability standards coupled with unrealistic deadlines may cause the skewing of information and data. Students identified in sub-groups are at an increasingly elevated risk for not graduating on-time as are students who attend school in urban areas as identified by Hazel et al. (2014) There are significant gaps in the analysis of on-time graduation when determining how graduation rates have been collected and the compliance systems that may or may not be attached to the data. Specifically, it is challenging to access information that is accurate and measured comparably. Samel et al. (2011) addresses a crucial factor in the forward movement of accessing data about on-time graduation, suggesting that the most pertinent data can be retrieved in 7th, 8th and 9th grade when disaggregating information regarding attendance, discipline, and programming options.

Significance of the Study

The research focused on on-time graduation of suburban students; however, it does not evaluate the relationship amongst students within the subgroups. The factors proposed as impacting on-time graduation, such as attendance, behavior, and course completion offer some insight, but lead to further questions when students fall within both established subgroups. Are there specific differences such as a connection between low socioeconomics, attendance, and course completion that impact students within these subgroups? This study will attempt to find the connections amongst factors that impact on-time graduation for secondary students in a suburban high school. The need for research focusing on suburban students will be impactful in the secondary school setting to better serve and support students in the aim to an equitable education that fosters success.

Conclusion

The review of literature related to suburban students focused on the historical overview, and factors that impact on-time graduation. The historical overview has established a lineage of federal laws that affected public education in the United States. The last fifty years have reestablished how American students are educated in terms of environment, curriculum, policies, and services. Coupled with Bronfenbrenner's Ecological Theory (1979), it is essential to evaluate the potential factors that may impact high school graduation. Messacar & Oreopoulos (2013) challenge the education community to view high school dropout as a series of events that compound in high school dropout. Overall, the review of literature suggests that there are several

factors that must be considered when determining the cause of high school graduation rates.

Primarily, these factors support the research in this study and consist of attendance, discipline, and overall school performance.

Chapter 3: Research Methodology

This chapter is an overview and explanation of the mixed-methods research utilized to collect and analyze data for this dissertation. Research methodology, as well as, the location of the study, subject population, sampling methods, notification and consent will be identified in this chapter. An analysis of data management, storage, and evaluation techniques will be provided. The methodology applied to the data collection is intended to ascertain if there is a relationship between the conceptual framework and hypothesis. This research study seeks to determine which factors have the greatest impact on on-time high school graduation.

Introduction

This mixed-methods (QUAN + qual) exploratory study examined factors that are known to influence on-time graduation for students in a suburban school district in the Southeast Michigan metropolitan area. On-time graduation is an important outcome factor for youth attending public school because it has been associated with future access to opportunities that impact adult living. To measure on-time graduation, data was collected from quantitative sources, secondary data from school records and primary data collection was completed using a survey. Qualitative data was obtained through responses to open ended questions from teacher participants regarding their personal experiences with students and on-time graduation.

Research Questions

This mixed-methods research will be used to answer the fundamental question: What variables impact on-time graduation for students in a suburban school district. Sub-questions addressed by the research study will include the following:

1. What variables impact on-time graduation for students in a suburban high school.
 - a. Do state assessments predict on-time graduation for students?
 - b. Does on-track attendance impact on-time graduation for students?
 - c. Does credit earned in 9th grade English Language Arts impact on-time graduation for students?
 - d. Does credit earned in 9th grade mathematics impact on-time graduation for students?
 - e. Does membership in a subgroup impact on-time graduation for students?
 - f. Does disciplinary action impact on-time graduation for students?
 - g. Does school of choice enrollment impact graduation for students?
 - h. Does a student's outside community impact on-time graduation?

Null Hypothesis: The ecological systems a student is exposed to do not impact on-time graduation.

Framework

This chapter will focus on Bronfenbrenner's Ecological Systems Theory (1979) as it pertains to students in grades 9-12 in a suburban high school. Utilizing this conceptual framework, I will demonstrate the relationship between the systems and student's ability to earn a

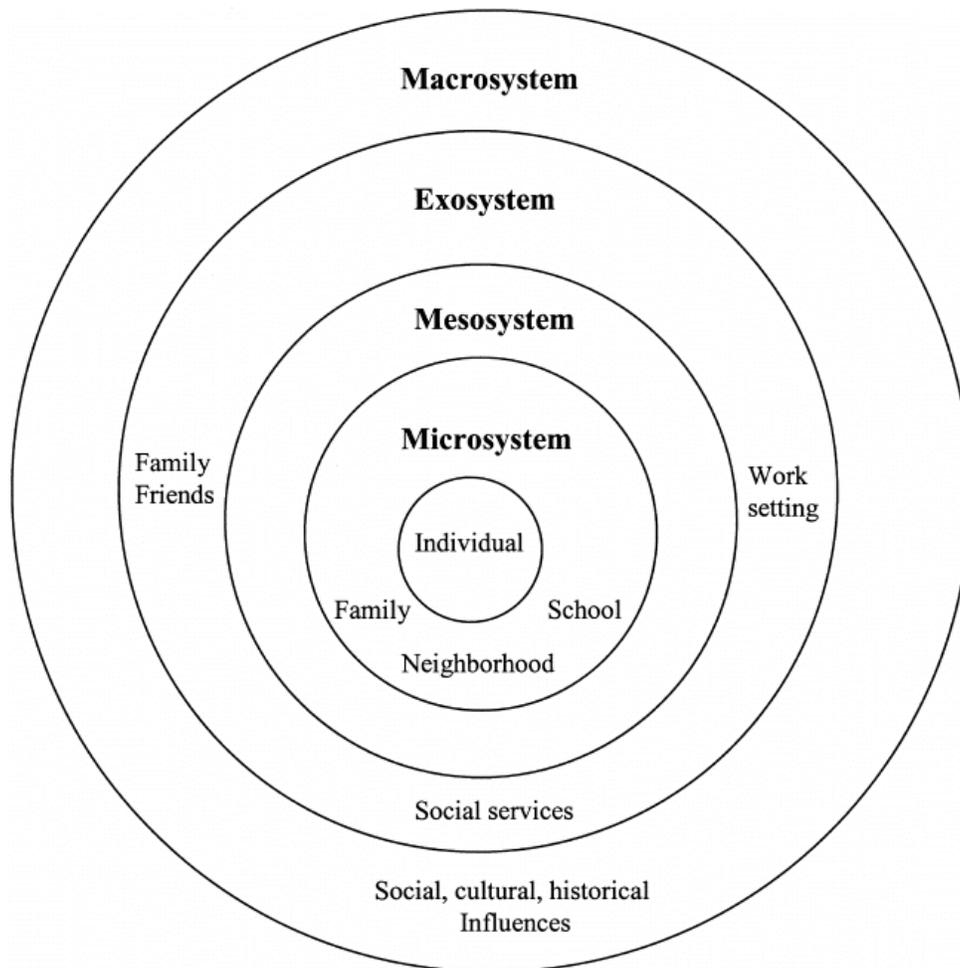
high school diploma. I will assert that Ecological Systems Theory may be applied to the factors that impact on-time graduation. With focus on four of the systems identified in Ecological Theory may facilitate a deeper awareness of the factors that have a direct impact on high school graduation. Integrating the Bronfenbrenner's research may further strengthen school systems in fostering increased graduation rates.

Ecological Systems Theory asserts that an individual, in this case a student, interacts within the four systems that have considerable influence on the overall outcome of academic success that leads to the attainment of high school diploma. These systems include Microsystem, Mesosystem, Exosystem and Macrosystem. Each works interdependently among all facets of a student's life and impacts a student's perception, viewpoint, and overall interpretation of how the world around them works.

Ecological Systems Theory is modeled to depict the interdependence of systems that impact a life. Figure 3.1 is a model showing the concept. As seen in Figure 3.1, each subsequent layer builds to develop a person's view of the world. These systems work in social interactions, events, relationships, interconnections, family, friends, cultural, economic, political areas.

Figure 3.1

Social Ecological System Model, Urie Bronfenbrenner 1979



Note. The figure represents the interdependence of systems within the Ecological Systems Theory. Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge MA: Harvard University Press.

The research in this study was conducted using Ecological Systems Theory. This theory places emphasis on the school-community framework that portrays a dynamic continuum with a

multitude of layers working simultaneously. Ecological Systems Theory may be employed to research the effects that most significantly impact child development and overall on-time graduation.

Employing Ecological Systems Theory to the on-time graduation of suburban students may provide key information to the systems that most significantly impact students. The systems identified in Ecological Systems Theory include:

- Individual: sex, age, race, health
- Microsystem: family, peers, school, health service
- Mesosystem: connections to the microsystem
- Exosystem: neighborhood, extended families
- Macrosystem: social values, culture, government, economy

Each of these systems work interdependently and may impact the factors that lead to on-time graduation from the public school system. Bronfenbrenner elucidates this process through the refinement of theory within each of the subsystems he identifies:

Human development is the process through which the growing person acquires a more extended, differentiated, and valid conception of the ecological environment, and becomes motivated and able to engage in activities that reveal the properties of, sustain, or restructure that environment at levels of similar or greater complexity in form and content (Bronfenbrenner, 1979, p. 27).

Ecological Systems Theory may be applicable when determining what factors influence on-time graduation for students attending high school in a suburban district. Scott (2016),

performed a longitudinal research study with New Zealand students, expanding Bronfenbrenner's Ecological Systems Theory by incorporating systems specific to public school. Scott (2016) employed the variables consistent in schools to parallel the impact that systems play in the development, success, and ultimately the graduation of high school students. Leonard (2011), in an historical case study of a suburban school, further engaged Scott's interpretation, building on the concept that both direct and indirect interactions within the school environment directly influence students in suburban schools.

Ecological Systems Theory builds on the concept that there are interconnecting systems that have direct influence on students. Utilizing Ecological Systems Theory, this study will focus on variables that impact on-time graduation, specifically identifying in what grade/s the variables occur. The Table 3.1 flow chart will outline the outcomes, inputs, sequence of events and help ensure the necessary data are collected. Table 3.1 presents a logic model for this study:

Table 3.1*Model for Study*

Goal	Determine what variables impact on-time graduation for suburban students.
Quantitative Data	<ul style="list-style-type: none"> • Attendance • State Assessment • Disciplinary Action • 9th Grade ELA Credit • 9th Grade Mathematics Credit
Qualitative Data	<ul style="list-style-type: none"> • Attendance • State Assessments • 9th Grade ELA Credit • 9th Grade Mathematics Credit • Family • Neighborhood • Peer Group
External Factors	<ul style="list-style-type: none"> • Teacher participation • Cancellation of in-person school due to Covid-19 Pandemic
Assumptions	<ul style="list-style-type: none"> • Teachers will accurately answer survey questions.

This model shows that the goal of the mixed-method research is to determine which factors impact on-time graduation for suburban students. The first block indicates quantitative data that will be collected and analyzed from MI School Data. The second block indicates qualitative data that will be collected and analyzed utilizing a teacher survey.

Research Design and Methods

This study uses a parallel mixed-methods research design. There are a number of researchers such as Johnson (2009) and Scales et al. (2005) who utilize a mixed-method research design to study the effects of rural and urban education in relation to high school graduation outcomes. Parallel mixed-methods design was chosen based on the work of studies that were able to effectively answer research questions based on this model. There was no specific sequence to data collection for this study. One method of data collection was not dependent upon another, this research study is parallel as opposed to a sequential method that would require data to be collected in a specific order (Creswell, 2014). Mixed-methods research was chosen based on the research questions and sub-questions the study asks. Both quantitative and qualitative data will be collected and analyzed in an exploratory nature.

Both quantitative and qualitative research methods were employed in order to provide a well-rounded understanding of what may contribute to suburban students' achievement of on-time graduation within a four-year cohort. Using an explanatory, parallel design, the research will identify what factors impact on-time graduation for suburban students. This design is represented by a (QUAL + quan) as defined by Morse (1991).

Data Analyses: Mixed-Methods Approach

A mixed-methods approach was chosen for this research study to provide both quantitative and qualitative data. This data provides a well-developed view of the variables that impact on-time graduation for students in a suburban school district. This research study

employed a convergent parallel mixed-method approach; quantitative and qualitative data collection were done simultaneously. Utilizing this method, data from both quantitative and qualitative methods are integrated in the overall analyses of research findings (Creswell, 2014). Included are assumptions that impact the model such as the accuracy of data in MI School Data and the reliability of teacher survey responses. External factors such as participation of teachers taking the survey as well as the global pandemic Covid –19 which initiated the shutdown of Michigan schools during the research phase of this study.

Role of the Researcher

The role of the researcher in this mixed-methods study will be non-participatory, meaning that I will not have contact with the teachers who are surveyed. Through the duration of the research, I will be employed in Russell School District as a special education supervisor and principal at a school that is outside the scope of research presented in this study. Special education supervisors and principals in the district serve in a leadership role. The duties of special education supervisors and principals are to: maintain IEP compliance, ensure fidelity of policies and procedures, and serve as instructional leaders. For this reason, the specific student group assigned to my administration of programs has not been included and will be free of any conflict of interest. I will maintain daily responsibilities and obligations in the district, and I am unable to be present during teacher preparation time. Due to my role, as the researcher, in the Russell School District, non-participatory is the optimal method by which to gain insight from teachers and student data. My role as the researcher in this study will be to construct mixed-

methods research in order to answer identified research questions related to suburban students and the variables that impact on-time graduation.

Research Ethics

This research study will be conducted with human participants; therefore, research ethics will be strictly followed. I will adhere to the code of ethics for conducting educational research with human participants. Participants in this research study will be adequately informed and provide written consent as a voluntary participant. As the researcher, I will provide absolute anonymity for participants including the secure storage of all data.

Permission to conduct this study was obtained from the Institutional Review Board (IRB) of the University of Michigan. Each of the documents that provide consent, as well as the IRB application are attached in the appendix (University of Michigan - Dearborn, 2020). The researcher in this study will act only as a non-participant observer.

Progression of Data Collection and Analysis Processes of the Study

The progression of data collection is primarily quantitative in nature using variables in MI School Data and close-ended questions in a teacher survey. Qualitative data will be collected through open-ended questions located on the teacher survey. Data will be merged to identify specific themes regarding the variables that impact on-time graduation for suburban students.

Quantitative Research

Within this study, quantitative data will be obtained from MI School Data, this database is administered by the Michigan Department of Education. Quantitative research is the collection of numerical data in research that is put through standardized statistical tests to analyze and gain further understanding of phenomena (Blaikie, 2003). The goal of quantitative research in this study is to collect data that represents the factors that impact a 4-year high school cohort's on-time graduation. The goal of this research is to explain a phenomenon. Phenomena refers to the 4-year experience of the students. This research phenomenon that is being evaluated is how the combined interaction of performance impacts a student's overall achievement and high school graduation.

This study uses secondary data that was collected by the school district and submitted to the Michigan Department of Education. The data is quantitative in nature and includes the following: standardized test (proficient/nonproficient), attendance (truancy), disciplinary (suspension/expulsion), and credit in 9th grade ELA and 9th grade mathematics (greater than 60%). MI School Data is a digital warehouse that houses data from each school and district in the state of Michigan. The data is available to educators, parents, policymakers, and the media at varying levels of password secure data based on the role of the user.

Data Collection

Disaggregation of the data collected will be further analyzed to determine which factors have substantial impact on on-time graduation in a 4-year cohort. Data will be collected from the following school years 2016-2017, 2017-2018 and 2018-2019.

Qualitative Research

According to Creswell (1994), qualitative research utilizes a process of open inquiry to explore a social problem. In this research qualitative research will be used to gain a teacher's perspective regarding what factors impact on-time graduation in a four-year cohort. This data will be used in tandem with quantitative data to attempt to establish the educational phenomena in connection to Bronfenbrenner's Ecological Systems Theory (1979) that impact academic achievement.

Development of the qualitative question included in the teacher survey sought to provide educators with the opportunity to share their perspective in regard to the research question. The qualitative question was positioned as the final question on the teacher survey. The respondents did not have a minimum or maximum number of responses they were able to record. The open-ended question provided the opportunity to share potential barriers that educators perceived as impacting on-time graduation in a four-year cohort. The inclusion of a qualitative question was designed within the research to elicit potential themes and/or patterns that coupled with quantitative data could describe the education phenomena that was occurring during the established school years.

Survey Protocol Development

Qualitative data will be gathered using Qualtrics. The survey will have twenty closed ended questions that focus on the research sub-questions. The survey consists of 24 questions, including questions in the categories of consent, teacher background, teacher perspective, and an open-ended question. The sub grouped questions include questions regarding attendance, family,

peers, student cultural group, state assessments, 9th grade ELA and mathematics credit, school of choice, transportation, local economy, and overall safety. A five-point Likert Scale will be used in the survey to provide participants with the following options in response to each question: strongly agree, agree, neither agree or disagree, disagree, and strongly disagree.

Each of the questions and sub-questions will ask teachers from Russell High School to respond utilizing multiple choice questions that are set in a Likert Scale answer format. The last question on the survey is open ended to provide the participants with the opportunity to share their own perceptions regarding the research question. The analyses of qualitative data will be simultaneous with quantitative data in order to identify specific themes and variables.

Data Collection

The Russell High School teachers that participated in the survey were sent an email containing the invitation to participate and description of the research study and a link to the survey. The link connected participants directly to the survey. The first question of the online survey requested participants to verify that they were eighteen or older. The second question requested that participants give their consent to participate in the survey. Participants were required to answer each of the questions on the survey. Survey participants had the option to discontinue their participation in the survey at any time. If a participant did not complete the survey in entirety, their responses were recorded but not utilized during analysis.

Study Background: Demographics and Population

With approximately 16,500 residents, Russell City is approximately five square miles. Over the past several years the city has undergone drastic changes both financially and demographically. Home values were reduced by up to 50% due to the economic depression of 2008, a significant quantity of Russell homes have been turned into rental properties (U.S. Census Bureau, 2021). This has led to extensive transiency amongst Russell's students and an increase in the number of students living in poverty; the current student body consists of 89% of students receiving free or reduced lunch (Michigan Department of Education, 2019). With these demographic changes have come significant decreases in academic achievement. The Michigan Department of Education (2021) uses seven components to measure the overall index of schools. The seven components include: summative growth, summative proficiency, graduation rate, English language, progress, school quality/student success, assessment participation, and English language participation. The Michigan Department of Education (2021) has identified Russell High School as a school in need of targeted support and improvement for underperforming groups, all components (25 percentile). According to MDE (2021), the overall index has steadily dropped in the school years 2016-2017, 2017-2018, 2018-2019.

Population

The Russell School District, a pseudonym used to protect the research site, is in a suburb of Southeast Michigan metropolitan area. Demographic and population data provide insight into Russell, Michigan. The World Population Review (2019) provides statistics that represent

characteristics of the community including such factors as: growth rate trends, race, rent/own, household type, education, language, poverty, income, and employment. The significance of demographic and population data is fundamental to the development of a thorough understanding of the community in which the research will be conducted.

Population, the number of people living in an area, is utilized to identify growth rate trends in cities. The population in Russell, Michigan, according to the World Population Review (2021) was 16,489 in 2017. The population has experienced a steady decline since 1960 with exception of a brief increase in the years between 2011 and 2014. Total growth trends currently available do not present a clear delineation of the number of people that have moved out of Russell, Michigan, in contrast to those who have moved in.

According to the United States Census Bureau (2018), the population in Russell, Michigan, is White reflecting over 80% of current residents. African Americans represent over just over 12% of the population, with 8% representing Asian, Pacific Islander, American Indian, and Hispanic residents (United Census Bureau, 2021). Demographic statistics from The World Population Review (2019) suggest that the residents of Russell, Michigan are evenly divided between male and female.

According to the United States Census Bureau (2017), 50.5% of residents own the homes they reside in, while 49.4% rent their homes. The overall impact of this data may suggest an increase in transient population; furthermore, it establishes ownership amongst approximately half of the population which is common in like communities across Michigan. In review of the housing availability in Russell, approximately 85% of homes, according to the United States

Census Bureau (2017) are single family detached units, while the other 15% consist of more than one living space in a structure.

Educational data for Russell, Michigan reflects that the majority of residents' highest level of educational attainment is a high school diploma at approximately 36% (World Population Review, 2021). Trends in education exhibit that the majority of residents in this community fall within the following categories: less than 9th grade, 9-12 grade education, and high school diploma. The impact of the adult education level on current students in a four-year cohort may reflect depressed on-time graduation rates as evident in census reports that signify trends. According to the World Population Review (2021), approximately 18% of residents have attained an associate degree or higher level of education.

The US Census 2017 ACS 5-year Survey (Table S1501) reflects the average yearly income for residents in Russell, Michigan to be just over \$26,000 per year. Income level in this community falls far below the average income in the United States. At this median income, it is estimated that over 25% of residents are living in poverty. This is over half the poverty rate as reported by the United States Census Bureau for the year 2017, which was listed at 12.3%. Employment rates, according to the US Census 2017 ACS 5-Year Survey are at 55.5% with an unemployment rate of 6.9%. The United States Bureau of Labor Statistics reports that the average unemployment rate in Michigan is 4.5% with an overall ranking of 42 (lowest unemployment) nationwide.

The demographics and population statistics are reflective of a suburban city, in the Southeast Michigan metropolitan area. Examination of these factors are critical in order to

distinguish characteristics of the suburban community and the public school district within its border. Approximately 760 students attend Russell High School with a ratio of 22:1 student to teacher according to the Michigan Department of Education (2019). The Michigan Department of Education (2019) identifies the median range of years of teaching experience as 14 with an overall retention rate of teachers at 67%. Forty teachers are currently employed full-time at Russell High School.

Data Analysis

Data analysis will be performed following the mixed-methods (QUAN + qual) survey distributed through Qualtrics. To accompany the teacher survey, MI School Data (2021) will be used to establish the data reported to the Michigan Department of Education by Russell School District. The survey will be sent to 40 Russell High School teachers and consist of 24 questions including questions in the categories of consent, teacher background, teacher perspective and an open-ended question. Survey questions will accumulate quantitative data through questions in the following areas: attendance, family, peers, student cultural group, state assessments, 9th grade ELA and mathematics credit, school of choice, transportation, local economy, and overall safety. Qualitative data will be collected through open-ended questions in the teacher survey in which teachers may expound upon their experiences with student on-time graduation. Data collected will be analyzed utilizing Ecological Systems Theory to establish patterns in the systems that have the greatest overall impact on on-time graduation.

Summary

This chapter has distinguished the purpose of the research study which is to identify the variables that impact on-time graduation for suburban students. By understanding the quantitative and qualitative data, analysis has taken place to identify themes. Bronfenbrenner's Ecological Systems Theory (1979) will be used in the interpretation of data results. The theory will provide a lens through which students can be viewed through multiple layers with which they belong during 4 years of high school attendance. The findings from this mixed-method research study are reported in Chapter 4.

Chapter 4: Findings

Graduation rates have been a consistent factor in the educational system for measuring the effectiveness of school districts. Federal legislation mandates that each State must set a rubric of accountability for public schools. The *Every Student Succeeds Act* (2015) reinforces the level of accountability that is held for the education of our nation's students at the state, district, and school levels. Education has transitioned through several phases of accountability in the last five decades; however, there are few recent studies that evaluate the specific components that impact graduation rates in suburban high schools. This mixed-methods dissertation addresses this gap by examining which factors most prominently effect on-time graduation rates in a suburban high school.

As detailed in Chapter 3, this (QUAN + qual) mixed-methods dissertation used data from three sources: (1) demographic analysis of school outcomes from the Michigan Department of Education (MI School Data) dataset, (2) a survey administered to Russell High School teachers to collect quantitative data, and (3) qualitative questions in the survey to collect expanded teacher perceptions. The research questions were used to springboard the teachers to reflect upon their experience on what specifically impacts the graduation rates of their students. The research question seeks to evaluate a teacher's perspective on what factors coincide with on-time graduation.

1. What variables impact on-time graduation for students in a suburban high school?
 - a. Do state assessments predict on-time graduation for students?

- b. Does on-track attendance impact on-time graduation for students?
- c. Does credit earned in 9th grade English Language Arts impact on-time graduation for students?
- d. Does credit earned in 9th grade mathematics impact on-time graduation for students?
- e. Does membership in a subgroup impact on-time graduation for students?
- f. Does disciplinary action impact on-time graduation for students?
- g. Does school of choice enrollment impact graduation for students?
- h. Does a student's outside community impact on-time graduation?

The research questions coupled with the sub-questions supported the development of the hypothesis: the systems that a student is exposed to are related to on-time graduation. The research question also led to the development of the null hypothesis: the systems a student is exposed to do not impact on-time graduation. To test these hypotheses, the results of the quantitative teacher survey, qualitative teacher response, and data from MI School Data were conjoined to determine what variables impact on-time graduation in a suburban high school.

Quantitative Data Analysis

Initial data collection was derived from a survey given to the teaching staff of Russell High School. The survey was sent to 40 high school teachers in the district and was returned by 12 participants for a completion rate of 30%. The teacher survey participants showed a cross section of the teaching staff at Russell High School. Participants were asked to identify what

grade levels they taught during their tenure at the high school; the surveys showed 25% taught 9th grade, 29% taught 10th grade, 25% taught 11th grade, and 20% taught 12th grade. All the teacher participants surveyed conveyed that they had taught 2 or more grade levels during their tenure at Russell High School. Teacher respondents were also asked to identify the number of years that they had taught at Russell High School. The respondents surveyed ranged from 43% at 0-2 years, 14% 3-5 years, and 43% over 9 years that they had taught at Russell High School. Using survey questions to define the cross section of teacher respondents, the overall data showed a wide variation of grade levels, academic areas, and years of experience as shown in Table 4.1. Quantitative survey data coupled with MI School Data (2021) submitted by the school district to the Michigan Department of Education on an annual basis was used to determine the factors that impact the state reported on-time graduation rates at Russell High School.

Table 4.1*Teacher Demographics*

Grade Taught		Teaching Experience	
9th grade teacher	25%	0-2 years of teaching experience	43%
10th grade teacher	29%	3-5 years of teaching experience	14%
11th grade teacher	25%	7-9 years of teaching experience	0%
12th grade teacher	20%	Over 9 years of teaching experience	43%

The Michigan Department of Education (2021) defines graduation rate as the percent of students graduating from high school in a four-year cohort. According to MI School Data (2021), Russell High School experienced a 5% yearly decline in the percentage of students graduating

from 80% in 2016-2017 to 70% in 2018-2019. The decline in graduation rates is not comparable with either similar schools by student characteristics which remained consistent throughout the school years at 89% or the state of Michigan average of 81% (MI School Data, 2021). At the same time, Russell High School experienced an increase in high school dropout rates which may have contributed to a decrease in on-time graduation rates. There was a 7% increase in the number of students who dropped out of high school during these school years. This trend did not coincide with similar schools by student characteristics nor the Michigan state average which both remained stable during these school years.

To accompany the teacher survey, MI School Data (2021) was used to establish context for the findings from the survey. According to MI School Data (2021), during 2016-2017, 2017-2018, and 2018-2019 school years, Russell High School lagged in all key performance indicators identified by the Michigan Department of Education (2021). Final overall indexes for each of the Key Performance Indicators per school are published in MI School Data annually. Russell High School, when compared to the average of similar schools by student characteristics and the State of Michigan average, fell below in each of the areas: Overall Index, Growth Index, Graduation Index, School Quality and Student Success Index, Proficiency Index and Assessment Participation Index. The indexes are used to assign a score that is used as an overall measure of school district performance.

The components overview shows how the seven school index components are combined to get a final overall index. For each component, its "Index Value" is multiplied by its

"Percent Weight" to get its "Weighted Index". Then component "Weighted Index" values are summed to get the "Overall School-Level Index." (MDE, 2021a, para 1)

The Key Performance Indicators for Russell High School depict declining district performance during the years 2016-2017, 2017-2018 and 2018 and 2019.

Table 4.2

Key Performance Indicators

Key Performance Indicators	2016-2017	2017-2018	2018-2019
Overall Index	62.29	57.2	52.59
Growth Index	56.58	47.17	41.89
Graduation Index	88.58	87.95	84.94
School Quality and Student Success Index	62.42	54.39	60.19
Proficiency Index Assessment	57.25	55.31	47.09
Participation Index	100	99.95	99.25

Analysis Results

State Assessments. Performance summary identifies the mean value percentage of students proficient in all subjects on state tests for the school years 2016-2017, 2017-2018, and 2018-2019. Russell High School earned a 28% compared to the mean value of similar schools by student characteristics which was 38% and the statewide average of 39%. (MI School Data, 2021). The comparison identifies Russell High School at a 10% gap in performance on state

assessments. A further comparison depicts that student progress toward proficiency on state assessments at Russell High School decreased 12.96% from 2016-2017 to 2018-2019 maintaining approximately 12% behind the State of Michigan Average. MI School Data verifies that >95% of students enrolled at Russell High School participated in state assessments over three years. Table 4.3 shows a summary of declining performance for the school year 2016-2017, 2017-2018, and 2018-19.

Table 4.3

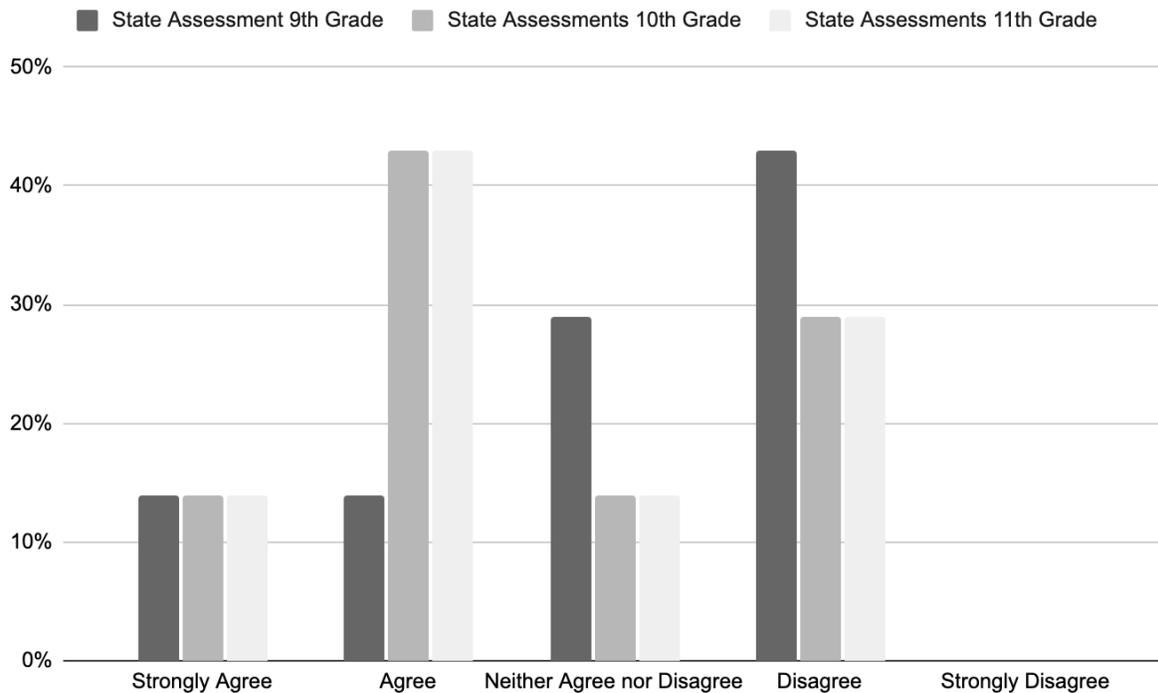
Summary of Performance and Progress

School Year	2016-2017	2017-2018	2018-2019	Difference
Performance Summary	62.90%	55.31%	49.94%	
Progress Summary		-7.59%	-5.37%	-12.96%

When examining data from the survey, responses revealed that teachers believed that state testing was much less important as an indicator of on-time graduation in 9th grade than in 10th or 11th grade. Teacher responses, as indicated in Figure 4.1, show a 29% (n=12) increase in the ability to predict on-time graduation rates during the 10th grade school year when compared to 9th and 11th grades. Responses revealed that 9th grade had a far lower level of agreement when compared to 10th and 11th grade when comparing the between state-assessment proficiency and the prediction of on-time graduation. Overall, the mean of teacher responses indicates that 34% of teachers surveyed neither agree nor disagree or disagree that state-assessment proficiency predicts on-time graduation.

Figure 4.1

Teacher Response: Does state-assessment proficiency predict on-time graduation?



Conversely, teacher respondents indicated on the survey that 9th grade ELA and mathematics credit earned did associate to on-time graduation. Survey results show that 86% of teachers at Russell High School either strongly agree or agree that credit earned in 9th grade ELA and mathematics were indicative of on-time graduation within a four-year cohort. The Michigan Department of Education does not collect data regarding English and Math credit earned in high school at this time. Performance summary data and survey questions in conjunction are not proportionate to 9th grade English and Math credit. Teacher responses indicate that credit earned in the 9th grade has a stronger correlation to on-time graduation.

Credit earned in ELA and mathematics courses parallels on-track attendance due to the school policy of loss in credit based on excessive absences.

The Michigan Department of Education (2021) defines on-track attendance as missing less than 10% of possible days of attendance during a school year. Russell High School had a steady decline in on-track attendance over the school years 2016-2017, 2017-2018, and 2018-2019. The performance indicator data shows a 11.39% drop in on-track attendance, from 71.52% to 60.13% percent of students. This data shows an approximately 20% discrepancy between similar schools by student characteristics as well as the overall Michigan average which remained consistent. Similar data regarding on-time graduation rates exits during the 2016-2017, 2017-2018, and 2018-2019 school years.

Table 4.4

On-Track Attendance

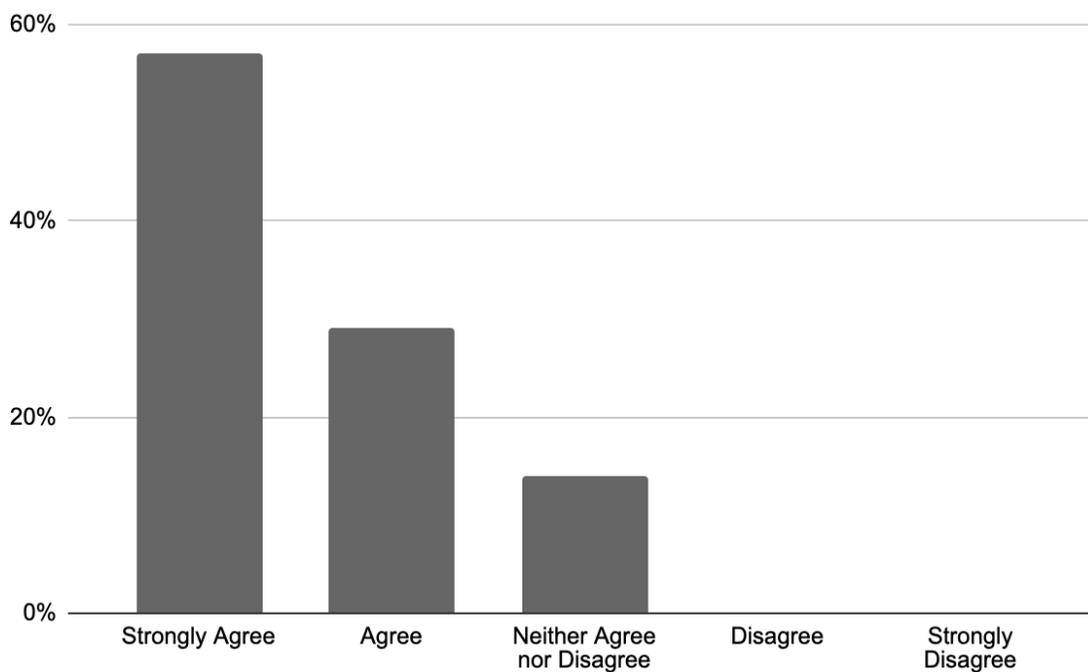
School Year	2016-2017	2017-2018	2018-2019	Difference
Russell High School	71.52%	54.73%	60.13%	11.39%

Comparatively, the survey responses from teachers show a strong association between on-track attendance and on-time graduation rates. Over 86% of teachers surveyed either strongly agreed or agreed that on-track attendance was indicative of on-time graduation rates. Both on-track attendance and graduation rates at Russell High School declined 10% from 2016-2017 to 2018-2019. The data collected from teacher responses coupled with MI School Data for Russell

High School for on-track attendance and on-time graduation shows a significant relationship. The rate at which students attend school, as indicated by MI School Data has a strong association to on-time graduation in a four-year cohort based on both teacher response and data obtained from the Michigan Department of Education.

Figure 4.2

Teacher Response: Does student on-track attendance impact on-time graduation?



The Behavior Dashboard on MI School Data provides data for the school years 2017-2018 and 2018-2019 (MDE, 2021). The Suspension and Expulsion category shows the number of students suspended or expelled from Russell High School, similar schools, and the state of

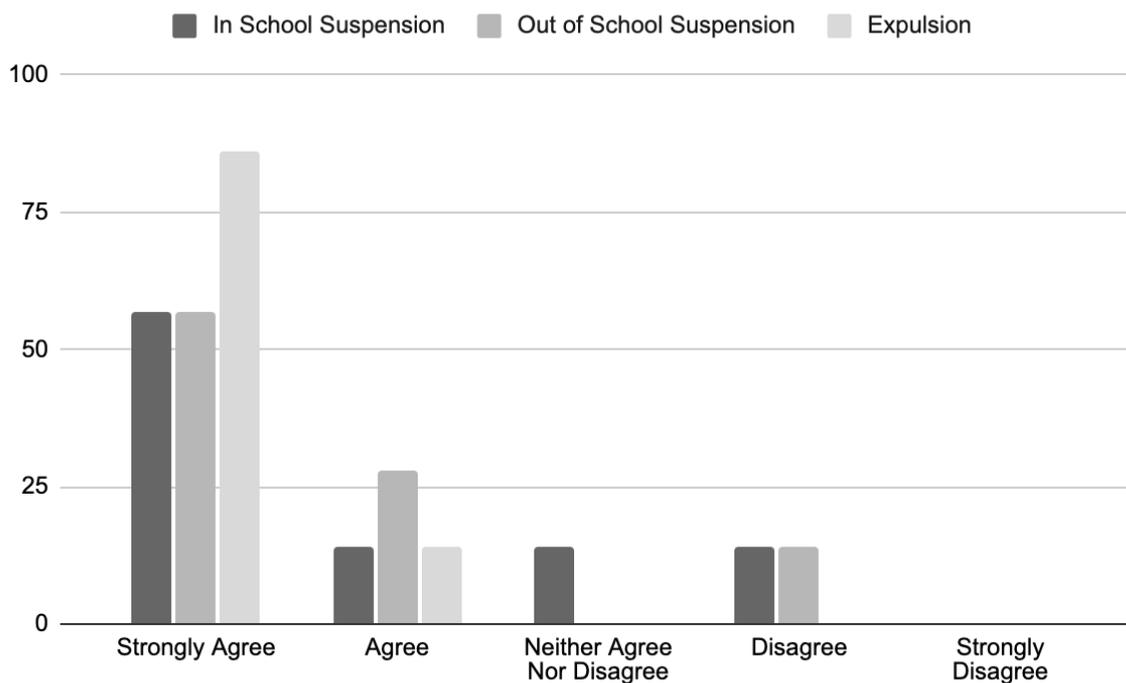
Michigan. According to MI School Data, the data for suspensions includes both in-school and out-of-school suspensions for the years provided (MDE, 2021). Russell High School had 115 suspensions/expulsions recorded for the 2017-2018 school year. The number of students suspended/expelled decreased by 27 for the 2018-2019 school year showing a notable reduction. Compared to similar schools, Russell high school on average suspends/expels approximately 14.5 more students per year. There is a significant difference in comparison to the state average with both Russell High School and similar schools. The average number of students suspended/expelled in the state of Michigan during the 2017-2018 and 2018-2019 school years was 31 students. The comparison identifies that Russell High School suspends/expels an average of 70.5 students more per year than the average of schools in Michigan. A further comparison depicts that student suspension/expulsion are elevated by over 37.5 students annually for both Russell High School and similar schools as compared to the state average. This data suggests that there is an association between disciplinary action and on-time graduation.

Teacher respondents identified on the survey that disciplinary actions impact on-time graduation rates. The survey differentiated types of disciplinary action, breaking it down into three categories: in-school suspension, out-of-school suspension, and expulsion. Within the categories, 71% of teachers strongly agreed/agreed that in-school suspensions impacted on-time graduation. This percentage increased with out-of-school suspensions to 85% of teachers who strongly agreed/agreed. When respondents were asked if student expulsion impacted on-time graduation in a four-year cohort, 100% either strongly agreed or agreed. While there were not any teachers who disagreed that expulsion impacts on-time graduation, 14% identified that in-

school and out-of-school suspension do not have an impact. The data from the teacher survey as seen in Figure 1.3 suggests a strong correlation between all three levels of disciplinary action to on-time graduation within a four-year cohort.

Figure 4.3

Teacher Response: Do disciplinary actions impact on-time graduation?



Social Ecological System

Microsystem

The respondents identified the Microsystem as the strongest predictor of on-time graduation in a four-year cohort at Russell High School. The survey questions associated with family and peers mirrored one another with 71% of teachers in strong agreement and 29% in

agreement that these relationships directly impact on-time graduation. The next level of Bronfenbrenner's Ecological Systems (1979), the Mesosystem, addresses interactions between the Microsystem and the Exosystem.

Mesosystem

The teacher respondents answered questions regarding both transportation and school of choice to ascertain if these factors, while interacting with Microsystem, impact on-time graduation in a four-year cohort. The teacher responses showed that 14% of teachers strongly agreed that both transportation and school of choice were indicators of academic success, while 71% agreed that transportation and 57% agreed that school of choice played a role. Within the Mesosystem, the respondents 14% for transportation and 29% for school of choice indicated that they neither agreed nor disagreed that these factors are connected to on-time graduation.

Bronfenbrenner's Ecological Systems model (1979) identifies the Exosystem as the next level in the continuum.

Exosystem

The teacher responses indicated that the local economy had less of an overall impact on graduation rates in a four-year cohort as compared to the identifiers in the Microsystem, Mesosystem and Macrosystem.

Macrosystem

Teachers were asked on the survey if the student's membership in the cultural group he/she identifies with, and his/her overall safety were factors that impact on time graduation in a four-year cohort. The responses to these survey questions indicated that teachers at Russell High

School felt that the Macrosystem did have a significant impact on students attaining a high school diploma. In reflection of the overall safety of students, all teachers surveyed reported that they either strongly agreed or agreed with the statement. The respondents did not indicate that the cultural group with which the student identified had a substantial impact on the ability to attain high school graduation within a four-year period. Table 4.5 shows the overall ratings in each of the systems as indicated by the teacher respondents at Russell High School.

Table 4.5

Ecological Systems Table

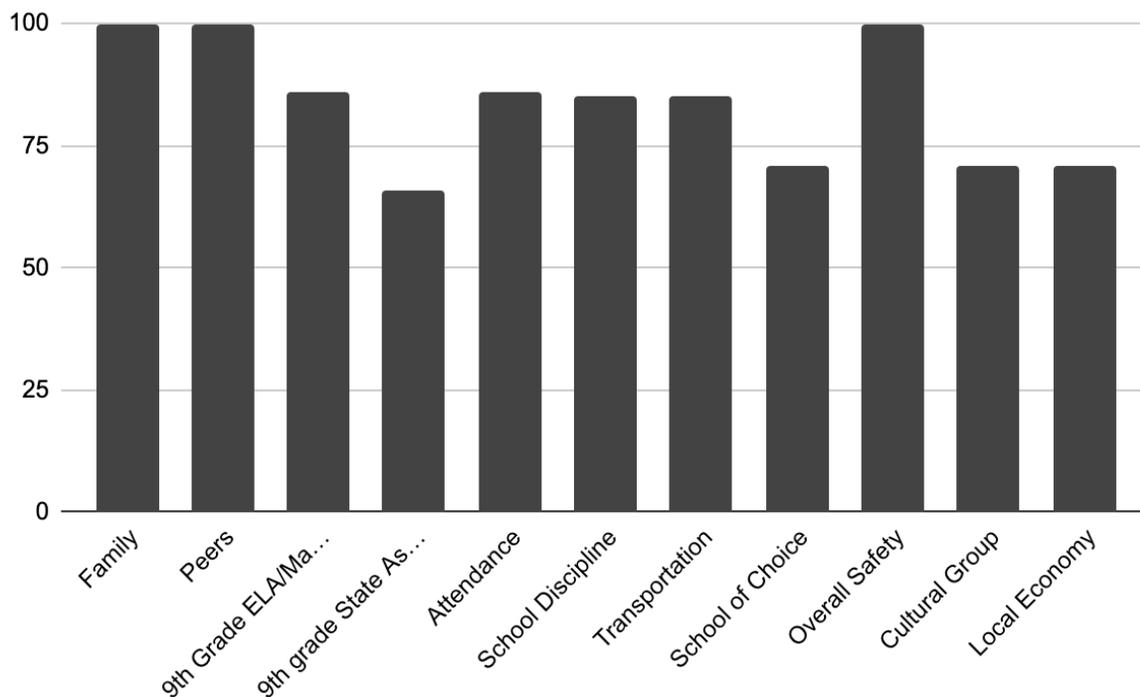
Ecological System	Strongly Agree	Agree	Neither Agree nor Disagree	Neither Agree nor Disagree	Disagree
Microsystem					
Family	71%	29%	0	0	0
Peer Group	71%	29%	0	0	0
Mesosystem					
Transportation	14%	71%	14%	0	0
School of Choice	14%	57%	29%	0	0
Exosystem					
Local Economy	14%	57%	14%	14%	0
Macrosystem					
Cultural Group	14%	57%	29%	0	0
Overall Safety	43%	57%	0	0	0

The data collected for the quantitative portion of the mixed-methods research indicated that students were most impacted by the following factors: attendance, discipline, overall safety,

family, and peer groups. The factors that the respondents saw as having a weaker overall impact on students were cultural group, transportation, school of choice, and local economy.

Figure 4.4

Factors that Impact On-Time Graduation by Percentage – Quantitative

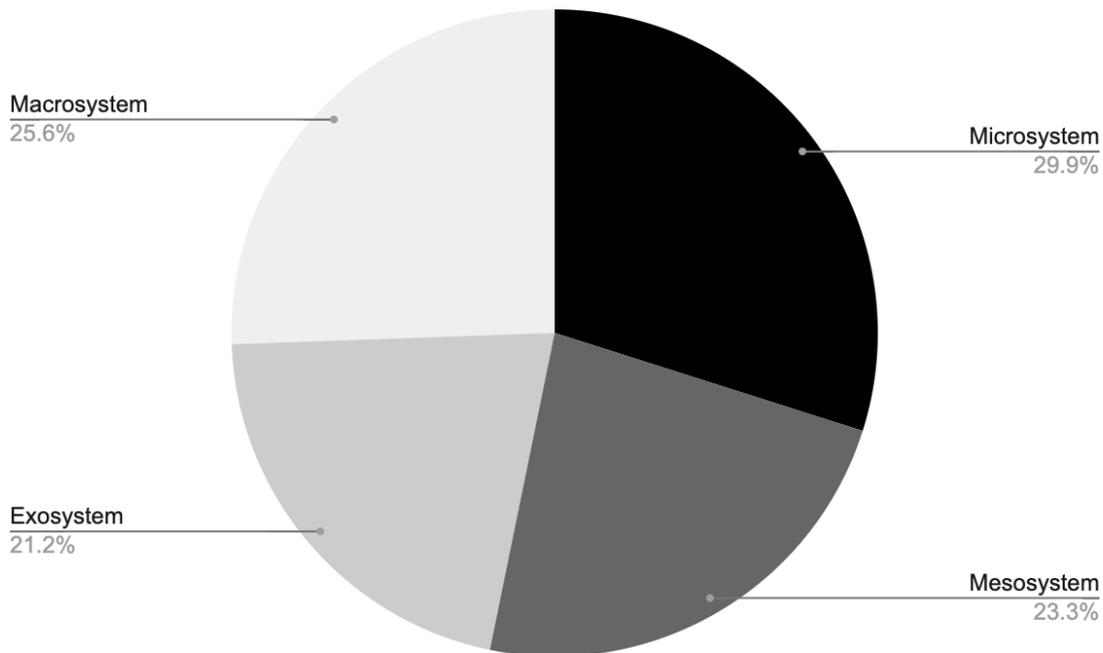


The factors that impact on time graduation in a four-year cohort according to teacher respondents fell into three of Bronfenbrenner's Ecological Systems (1979). The data collected from the diagnostic survey indicated that the Microsystem, the system closest to the individual, had the most impact on student academic achievement. The Microsystem included family, peers, attendance, school discipline, state assessments, and 9th grade ELA and mathematics credit. The

Mesosystem, the system that interconnects the Microsystem and Exosystem, had the second most impact on students, this system includes factors such as transportation and school of choice for Russell Students. Finally, the Macrosystem, according to quantitative data had the least impact of the three on a student's ability to graduate on-time in a four-year cohort. This system included the cultural group that the student identifies with. In Figure 4.5 the division of impact by system is depicted:

Figure 4.5

Impact of the Microsystem, Mesosystem, Exosystem and Macrosystem



Each of the teachers who participated in the survey were given the opportunity to respond to an open-ended question in which they could share what they thought were the greatest barriers

to students achieving on-time graduation in a four-year cohort. The results of the quantitative component of the research combined with the qualitative data worked in tandem to identify what factors have the greatest impact on on-time graduation.

Qualitative Data Analysis

Seven of the twelve of the participants responded to the qualitative question included in the survey in regard to what they perceive is the greatest barrier to graduating on-time in a four-year cohort. The teacher survey participants showed a cross section of the teaching staff at Russell High School. Participants were asked to identify what grade levels they taught during their tenure at the high school; the surveys showed that 25% taught 9th grade, 29% taught 10th grade, 25% taught 11th grade, and 20% taught 12th grade. All the teacher participants surveyed conveyed that they had taught 2 or more grade levels during their tenure at Russell High School. Teacher respondents were also asked to identify the number of years that they had taught at Russell High School. The respondents surveyed ranged from 43% at 0-2 years, 14% 3-5 years, and 43% over 9 years that they had taught at Russell High School. Using survey questions to define the cross section of teacher respondents, the overall data showed a wide variation of grade levels, academic areas, and years of experience.

Qualitative Component of Survey from Teacher Respondents

Responses from participants from the teacher survey had specific themes and characteristics. The respondents' answers varied by negative and positive responses within the established themes. This variation in responses supports the teacher's perspective on how

barriers can impact student graduation within a four-year cohort. Specifically, the responses varied in terms of how a student is impacted versus what students need in order to overcome systemic barriers that present challenges. The social/emotional wellness theme stood as the only theme that presented positive student attributes that impact academic achievement. Table 4.6 shows the themes that were present in the qualitative question responses.

Table 4.6

Teacher Perspective Themes and Characteristics

Themes	Characteristics
Family/Peers	Support (+) Trauma (-)
Economy	Poverty (-) Access to Education (+)
Attendance	Presence at School (+) Absence from School (-)
Social/Emotional Wellness	Determination Self-Esteem Motivation Attentiveness

Family

The qualitative data collected from teacher respondents indicated that family had a significant impact on students graduating on-time in a four-year cohort. The quantitative as well as qualitative data suggests a strong association between the Bronfenbrenner's Ecological

Systems Theory (1979) microsystem and academic achievement. Quantitative responses showed that 71% of teachers strongly agreed that peer's impact on-time graduation while 29% agreed with these statements. The qualitative data focused on the family as having the strongest influence on on-time graduation. Specifically, the support and trauma connected to the family component of the Microsystem that impacts the student most significantly.

Two patterns became apparent through the qualitative component of this research. First, the perspective that families that offer students support emotionally have a positive impact on academic achievement and on-time graduation. Survey respondents used terms such as 'supportive' and 'present' to define the positive relationship a family has on a student's overall academic achievement. This pattern was countered by the perspective that family trauma negatively impacts student on-time graduation. In the qualitative component of the research, Russell teachers did not elaborate on the types of trauma students may have encountered, instead they used trauma as a standalone umbrella term. Within the Microsystem, there was specific reference to family; however, peers were not identified by teachers as a barrier to on-time graduation.

Economy

The economic viability of the community that a student lives in was identified in the qualitative analysis through a theme distinguished by teacher response. Specifically, teachers responded that poverty as well as access to education impacted a student's ability to graduate on-time in a four-year cohort. The responses correspond to the data collected from The US Census 2017 ACS 5-year Survey (Table S1501) which reflects the average yearly income for residents in

Russell, Michigan to be just over \$26,000 per year. Income level in this community falls far below the average income in the United States. It is estimated that over 25% of residents in Russell School District are living in poverty. Russell teachers did not expand upon the phrase ‘access to education’ in the qualitative component of the survey; however, 71% of teachers strongly agreed or agreed that school of choice and 85% of teachers strongly agreed or agreed that transportation played a role in the ability to graduate on-time in the quantitative section.

Attendance

Teacher response in the qualitative component of the survey indicated attendance as a prime factor impacting a Russell student’s trajectory of graduation in a four-year cohort. The quantitative component of the survey showed that 86% of Russell teachers either strongly agreed or agreed that attendance was a factor in on-time graduation. With the opportunity to expand and support answers in the qualitative section of the survey, Russell teachers reported that attendance was a major influencing factor. Several terms emerged regarding this theme including school refusal, truancy, school withdrawal, and suspension. While teachers used these terms, the theme also emerged with terms such as good attendance and ‘coming to school every day.’ Russell teachers expressed that overall attendance, whether positive or negative was a strong predictor of the ability for Russell students to graduate on-time within a four-year cohort.

Social/Emotional Wellness

The qualitative survey showed that teacher respondents believed that social/emotional wellness in relation to the individual student was indicative of a student’s academic achievement. Specifically, the following terms were used to describe which qualities were believed to be

connected to on-time graduation in a four-year cohort: determination, self-esteem, motivation, and attentiveness. In this section of the teacher survey, respondents linked individual student qualities to the rate of success as opposed to connecting to the ecological systems that impact the student. Research linking positive individual attributes to the ability to achieve graduation in a four-year cohort is not collectively supported by available data and findings at this time.

Paradigms

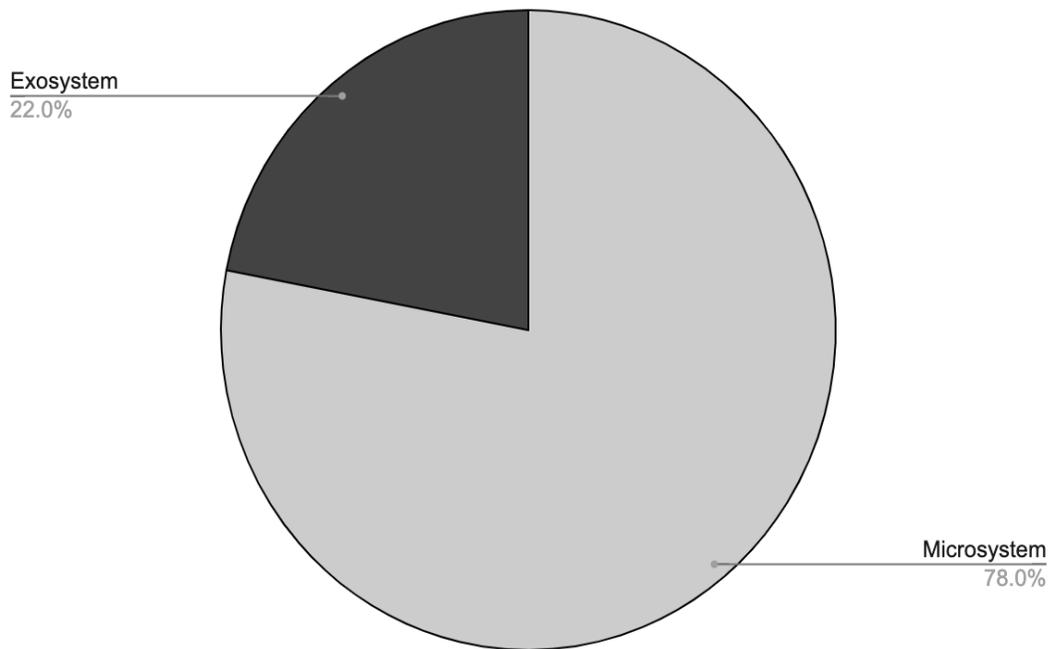
The paradigms identified in this mixed-methods research study can be associated with Bronfenbrenner's Ecological Systems Theory (1979) in regard to teacher responses on the survey. The ecological systems identified as most prominently impacting a student's academic achievement include both the Microsystem and the Exosystem. Within each of these Ecological Systems, themes were identified that directly linked to specific areas that impact a student's ability to graduate within a four-year cohort. Teacher responses focused on the microsystem and the Exosystem identifying the paradigms that have the most significant impact as those systems closest to the student.

The Microsystem, the system closest to the individual student associated key factors of impact for student achievement. Within the Microsystem, factors including family, peers, social/emotional wellness, and attendance were distinguished as key components of influence on the overall academic performance for students at Russell High School. Teacher respondents indicated through both quantitative and qualitative responses that the Microsystem is a significant influence on student achievement at Russell High School.

The Exosystem, as identified by local economy, transportation, overall safety, and student attendance was also established as having a significant impact on the overall trajectory of a student's ability to graduate within a four-year cohort. While less significant than the Microsystem, the consensus amongst teacher respondents was that these factors played a significant role in the academic performance of students; therefore, impacting the ability to graduate from Russell High School with their four-year cohort. Shown in Figure 4.6 is the distribution of qualitative data according to teacher responses of which system impacts a student's ability to graduate on-time in a four-year cohort.

Figure 4.6

Bronfenbrenner's Ecological Systems Theory - Qualitative



The paradigms inclusive of both Bronfenbrenner's Ecological Systems (1979) Microsystem and Exosystem have been established as having the strongest overall impact on academic performance and overall achievement. Students are impacted by these paradigms consistently throughout their high school career which the teacher respondents expressed as the strongest predictors of on time high school graduation.

Summary

This mixed-methods research study set out to answer the question: What variables impact on-time graduation in a four-year cohort for students at Russell High School. The research questions coupled with the sub-questions supported the development of the hypothesis: the systems that a student is exposed to are related to on-time graduation. The research supports the hypothesis that they systems that a student is exposed to are related to on-time graduation. Most significantly, using Bronfenbrenner's Ecological Systems Theory (1979), the diagnostic survey showed that the Microsystem and Exosystem where most impactful to student academic success. The composition of the mixed-methods research used parallel (QUAN+qual) methodology to gain insight into teachers' perspective in regard to the subcategories established as factors that impact graduation rates in a four-year cohort. Teacher respondents corresponded through a survey that used both quantitative and qualitative methods. To delineate specific outcomes, the research extrapolated those factors with a high impact level included: family, peers, attendance, 9th grade ELA and mathematics credit and school discipline policies. Each of these factors reside within the Microsystem, the closest system to the individual student.

The diagnostic survey that employed quantitative questions showed that teacher respondents believed that family, peers, and overall safety were the strongest measures impacting a student's academic performance. Furthermore, teachers identified that factors such as 9th grade ELA and mathematics credit, attendance, transportation, and school discipline were credible sources of predicting student graduation rates. Finally, the teacher respondents did not identify those factors such as state assessments, cultural group, school of choice enrollment, or the local economy had as significant an impact on student performance. This data primarily focused on the interaction of the Bronfenbrenner's Microsystem as having the strongest impact on student graduation outcomes.

The survey followed with a qualitative component that allowed teacher respondents to engage in their own perception of what factors most strongly impact on time graduation in a four-year cohort. Qualitative data differentiated as it procured an additional theme of social/emotional wellness associated directly with the individual student. In addition to social/emotional wellness, teacher responses focused on family, peers, attendance, and the local economy in describing what factors were most impactful to student graduation. These differed from the quantitative questions enlisted in the survey. Qualitative data showed that, again, teachers believed that Bronfenbrenner's Microsystem had the strongest impact on student academic performance, with the Exosystem having significantly less impact.

The mixed-methods research showed overall that the factors that impact on time graduation in a four-year cohort fall within Bronfenbrenner's Ecological Systems Theory (1979) microsystem. These factors include the impact of the family, peers, attendance, social/emotional

wellness, and overall safety of the student. While teachers did indicate that all the topics did have some impact on student academic performance, these factors were the most significant in attaining a high school diploma. In Chapter 5, areas for further research are detailed in regard to the results of this research study.

Chapter 5: Summary of Findings

This chapter will summarize and add greater depth to the findings of the mixed-methods (QUAN + qual) research study performed at Russell High School. The research looked to evaluate what factors had the greatest impact on on-time graduation for students in a four-year cohort. This chapter will present a synopsis regarding the findings of the teacher survey, implications for the school district, and recommendations for future research. The research study was guided by the following question: What variables impact on-time graduation for students in a suburban high school?

The research study was conducted through an online, electronic survey utilizing Qualtrics. Teacher respondents from Russell High School were contacted via email with the link to the survey. The principal at Russell High School also encouraged teachers to respond to the survey during a full staff meeting on Zoom. The survey was sent to all members of the teaching staff at Russell High School. Out of 40 potential teacher participants, 12 responded to the survey request. Respondents were provided with both quantitative and qualitative questions in order to elicit feedback regarding their perceptions of which factors impact graduation in a four-year cohort. Quantitative questions were designed utilizing key performance indicators from Michigan Department of Education (2021) to determine specific factors that led to academic achievement as well as graduation in a four-year cohort. Qualitative data was collected utilizing an open-ended question in which participants were able to identify what they perceived as factors impacting graduation in their own voice.

The research study identified which factors the teacher respondents perceived had the greatest impact on academic achievement. The survey showed common themes amongst the quantitative responses regarding what factors impact on-time graduation. The factors that were identified were: attendance, discipline, family, peers, overall safety, and credit earned in 9th grade English Language Arts and Mathematics classes. Each of these factors were identified through questions in the quantitative component of the survey and were identified by the percentage of teachers that either agreed or strongly agreed with the statements. Additionally, grouped questions linked to factors that impact academic achievement revealed those areas in which teachers did not agree had as significant an impact on graduation.

Study participants indicated through their responses that some factors had less impact on a student's academic achievement overall. These categories were identified through responses that were: neither agree nor disagree, disagree, or strongly disagree. The respondents indicated that state assessments, local economy, cultural group, school of choice, and transportation had less of an impact on a student's academic achievement. The quantitative data collected in the survey demonstrated some similarities to that of the qualitative data collected through teacher response following the survey.

The data collected for the quantitative portion of the mixed-methods research indicated that students were most impacted by the following factors: attendance, discipline, overall safety, family, and peer groups. The factors that the respondents saw as having a weaker overall impact on students were state assessments, English and mathematics credit, cultural group, transportation, school of choice, and local economy.

This theme is commensurate to both MI School Data and the quantitative component of the teacher survey as a strong indicator of on-time graduation in a four-year cohort. With only 61% (2018-2019) of students qualifying as ‘on-track’ in attendance at Russell High School according to Michigan Department of Education (2020), qualitative data gathered from the teacher survey indicated that 25% of participants believe this to be the strongest factor of academic success overall.

School absenteeism in association to on-track attendance in a four-year cohort has been established as a key performance indicator by the Michigan Department of Education (2020). Kearney & Graczyk (2020) recognize that attendance is a strong predictor of school achievement and associate ‘multifaceted ecological frameworks’ as means with which to account for discrepancies amongst school districts and across states. The continuum of factors established by the quantitative component of teacher responses supports that attendance in tandem with family, peers, local economy, and social/emotional wellness are the strongest predictors of on-time graduation.

The teacher survey associates poverty and access to education as barriers to a Russell student’s ability to graduate on-time in a four-year cohort. Wodtke, G.T., Harding, D.J., & Elwert, F. (2011) studied the impact of low socioeconomic status on high school graduation. The findings of this study support the teacher responses citing approximately 15% lower graduation rates in disadvantaged neighborhoods. The characteristics fall within the theme of economy that has been researched heavily in connection to graduation rates. Weiss & Reville (2021), refer to Maslow’s Hierarchy of Needs (1943) in terms of inequities of service and opportunity.

Furthermore, Weiss & Reville (2021) stress that the public school system's inability to serve as the 'great equalizer' in terms of equitable educational experiences. Growth in student poverty is rising at expeditious rates according to the American Federation of Teachers (2021) which is reflected in the teacher survey as a barrier in tandem with access to education.

Review of social/emotional wellness and its association to academic success is more widely researched in literature in relation to trauma-informed education and student resiliency. Brogden & Gregory (2019) researched student resilience at the postsecondary level associating Adverse Childhood Experiences (ACEs) with long term achievement. Overall, the study found that the more indicators that students showed on ACE's survey prior to age eighteen did impact the performance in community college. Though this has not been a topic highly researched for secondary education students, elements of resilience when associated with high school achievement can be paralleled when reflecting upon research at the postsecondary level.

Qualitative data was collected through an open response question following quantitative questions. Teacher respondents were asked what they believed to be the most crucial factors impacting a Russell High School students' ability to graduate on time in a four-year cohort. Four distinct themes emerged from this question including: family/peers, local economy, attendance, and social/emotional wellness. Each of the themes were prominent in the quantitative component of the research except social/emotional wellness. Teacher respondents were specific in their responses to the qualitative prompt citing characteristics that are directly associated with the established themes. Teacher perspectives regarding the ability of students to achieve

academically were equally divided in terms of positive and negative characteristics submitted within the established themes.

Systemic Causation

Teacher responses collected through the quantitative and qualitative (QUAN + qual) online survey questions showed clear delineation of systemic causation of graduation rates. At Russell High School, located in a suburban community, teacher respondents identified key components regarding the factors that impact on-time student graduation in a four-year cohort. Data collected through the teacher response survey was identified through themes that emerged within teacher responses. Designated themes were linked to systems in Bronfenbrenner's Ecological Systems Theory (1979). Systemic causation of the ability to graduate on time in a four-year cohort was established by utilizing data to associate multiple themes within each system in which predominant characteristics were identified.

Teacher participants identified that the Microsystem and Exosystem defined by Bronfenbrenner's Ecological Systems Theory (1979) were the most impactful to academic achievement. The Microsystem, as it relates to this research study, includes those people and systems that have direct impact on a student. The Microsystem is the closest system that a student directly interacts with. The Exosystem, the third system furthest from the individual student, is built upon the societal and cultural systems in place. The Exosystem does not directly impact the student; however, the laws and policies created within the system do influence an individual's interaction in society.

In this research study, subcategories were established and identified within each of Bronfenbrenner's Ecological Systems (1979). The Microsystem was identified by teacher participants as having the greatest impact on student graduation rates. The Microsystem was predominant in both the quantitative and qualitative components of the survey. Specifically, teachers identified the following factors within the Microsystem as having the greatest impact on students at Russell High School: family, peers, attendance, disciplinary actions, and social/emotional wellness.

In response to the qualitative component of the survey, teacher voice was established through the characteristics specifically named regarding student achievement. There was a variance in response as to the frame of the answer in terms of negative and positive perspectives. Examples of this could be found in responses that differed by statements such as 'family support' as opposed to 'family trauma.' Another example of teacher perspective that was apparent in the qualitative response was in regard to attendance; responses varied from 'excessive absences' to 'excellent attendance.' The teacher responses that addressed social emotional wellness included a diverse bank of terms such as 'determined' and 'motivated' that were specific to individual student attributes. Furthermore, teachers named factors such as 'poverty' to address the local economy and its impact on a Russell student's ability to graduate on time in a four-year cohort.

Conclusion

The teacher survey determined factors that impact graduation in a four-year cohort in a suburban high school. The survey was developed using Qualtrics and employed both quantitative

and qualitative questions in order to gain data regarding teacher perceptions regarding academic achievement. The responses to the survey were sorted utilizing Bronfenbrenner's Ecological Systems Theory (1979) to establish the systems that teachers perceive as having an impact on students. The variables were proven to have a significant impact on student overall achievement.

The teachers at Russell High School are tasked with developing and implementing School Improvement Plans on a yearly basis. Teacher perceptions regarding student performance and achievement showed a strong relationship amongst the factors that impact graduation rates in a four-year cohort. Utilizing mixed-methods research, the study showed that teachers were able to identify factors separate from those provided through the quantitative component of the survey. Qualitative data provided a more in-depth look into what teachers perceive has an impact on student achievement.

Participants in the research study provided feedback that was assigned to specific systems in Bronfenbrenner's Systems Theory (1979). A strong relationship was found between the systems that had the most significant impact on students graduating in a four-year cohort. Through quantitative survey questions, teachers were able to identify which factors attributed to academic achievement using Likert scale questions with a five-point scale. Teacher respondents provided a clear delineation of the Microsystem as having the greatest impact on academic achievement. In the qualitative component of the survey, teachers included themes and characteristics in both the Microsystem and Exosystems as impacting student achievement. Overall, the factors identified as having the greatest impact on high school graduation in a four-year cohort were family, peers, attendance, discipline, social/emotional wellness, overall safety,

and the local economy. The factors identified by teacher respondents all fell within Bronfenbrenner's Microsystem aside from the local economy which is identified within the Exosystem. As determined by the teacher's responses, the strongest influence on a student's performance is within the Microsystem which has direct and immediate impact on a student.

Implications for School Districts

The implications of this study for school district leaders and high school teachers are crucial in determining school improvement goals and objectives as well as tiered planning to support student achievement. When school leadership and teacher teams have data to support what factors impact graduation in a four-year cohort, they gain the ability to design and implement programs that can support student needs. Programs implemented at the secondary level to support student academic growth and achievement should be directly aligned to the Michigan Strategic Plan: Metrics (2021). It is increasingly important to focus on student needs that are specific to a school district in order to provide services and support that create equitable outcomes. The MDE has provided specific metrics for school districts, such as Russell, to assess and address in the School Improvement Process.

This study provides specific feedback from a teacher's perspective regarding the factors that impact on-time graduation in a four-year cohort. The metrics distinguished by the Michigan Strategic Plan can be directly associated to the questions posed in the research study. The metrics focus on three areas which directly affect high school students: improving the health, safety, and wellness of all learners, expanding secondary learning opportunities for all students, and graduation rates. The data collected in this research study delineates specific teacher perspectives

which may be used in tandem with the MDE Strategic Plan to implement robust curriculum and supports.

The Michigan Department of Education requires several components within the identified areas be specifically addressed. According to the MDE Strategic Plan Metrics these components include school breakfast programs, on-track attendance, physical activity, tobacco, school mental health, bullying, depression, suicide, asthma, and lead data. (MDE, 2021). The use of these metrics to identify student needs in tandem with teacher perspective data collected in this research study provides a profile of student needs. Additionally, the expansion of learning opportunities including career and technical education and expanded training deemed a priority through the Michigan Strategic Plan can impact future graduation rates.

In order to provide a clear understanding of how to support students, school district leaders and teacher teams must have data that is directly related to students enrolled in the high school. Data regarding the factors that have a significant impact on graduation in a four-year cohort can provide an avenue in which to design specific curriculum supports, social work systems, and adult and peer mentoring programs in the school. This may include professional development for school staff in order to provide a full spectrum vision of the students enrolled in the school. Specifically, MDE has identified that tiered strategies create robust interventions to support *Top 10 in 10*. Tiered strategies are already in existence at Russell High School; however, an increased understanding of student data coupled with awareness of interacting systems can build increased proficiency and effective programming and curriculum development.

Findings within this study show a clear delineation in the systems that teachers perceive as having significant impact on student achievement. The data collected from the teacher respondents may be impacted by the limited knowledge teachers have regarding the systems that they are not able to observe in the school environment. When teachers do not have a transparent view of the whole student and what factors, both in and out of school can impact their ability to achieve academically, it can cause a jaded view of the interaction between the student and the public education system. Working to support students within the systems, teachers have determined the most impactful factors within their lens of the students and environment. School and district leaders as well as teachers can gain insight into why students are not achieving high school graduation within their four-year cohort using data acquired during this research study. Furthermore, supplying teachers with information regarding factors that impact on-time graduation in a four-year cohort can assist them in understanding the systems and looking deeper into systemic change in education.

Recommendations for Future Research

Research does exist regarding on-time graduation rates for students nationally and globally; however, further research is necessary in relation to how events that have occurred both nationally and globally during the 2019-2020 and 2020-2021 school years further impact student academic achievement and graduation. Utilizing and expanding the research in this study with the addition of components such as the global pandemic, race, ethnicity, and socioeconomics will further establish systemic factors that suburban public school students experience. The

continuation of this research with additional factors can assist school leaders and teachers in developing tiered supports for students.

The global pandemic, Covid-19, that occurred during the tenure of this research study may have impacted the results in a plethora of ways. The teacher perception survey was distributed in May 2020 following the closure of all Michigan Schools by Governor Gretchen Whitmore. During research collection, teachers at Russell High School were working remotely and attended all meetings with administrators on a virtual platform. Because there was substantial uncertainty regarding the progression of the school year, it is plausible to deduct that Russell High School teachers were prioritizing only what student contact the district deemed expected.

In future research, it would be beneficial to increase the sample size through extension of time, added reminders to participate, as well as encouragement for increased participation from school leaders. The survey was dispersed in May 2020, following the Michigan governor's orders to close all schools. During this time, teachers in Russell School District were tasked with the duties of teaching remotely for the first time ever. The potential for increased participation would assist in developing a cohesiveness between students and the systems that impact their success.

Furthermore, it would be prudent to diversify the factors in relation to quantitative and qualitative (QUAN + qual) to include factors that impacted student achievement during the Covid-19 pandemic such as technology, WIFI, and the direct impact of the virus on families. These factors would be beneficial to further research as the global pandemic during the 2020-2021 school year has forced school leaders and teachers to rethink how students are impacted by

systems and what the overall and lasting results may be. Further examination of this research with the addition of the factors created by the global pandemic will add to the current literature as well as offer a comparative perspective.

Finally, as racial tension continues to rise in the United States, a substantial addition to this literature would exist in examining how race and ethnicity impact a teacher's perspective. Incorporating Critical Race Theory within the additional factors of race and ethnicity would allow for a more transparent view of the systems impacting students and if they differentiate within diverse school populations. This would allow for district leaders and teachers to create strategic plans factoring in variables across a wider band of systems to plan for student academic success. Education has transformed from its traditional platform to a virtual platform with compounded factors of race and ethnicity, social economics, and social/emotional wellness. These factors have the potential to extend this research and become the platform to understanding and developing strategies to empower the public-school students.

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Appendix A

The University of Michigan-Dearborn

PARTICIPANT INFORMED CONSENT LETTER

On-Time Graduation Rates in a Suburban Secondary School: A Mixed Methods Study
Examining Factors that Impact Student Academic Achievement and Graduation

Title of Project:

On-Time Graduation Rates in a Suburban Secondary School: A Mixed Methods Study
Examining Factors that Impact Student Academic Achievement and Graduation

Researchers:

Megan E. Papasian-Broadwell, University of Michigan-Dearborn Doctoral Candidate, Principal
Investigator

Bonnie M. Beyer, Ed.D., University of Michigan-Dearborn, Faculty Advisor

Dear High School Teacher,

You are being invited to participate in the research study: ‘On-Time Graduation Rates in a Suburban Secondary School: A Mixed Methods Study Examining Factors that Impact Student Academic Achievement and Graduation.’ The focus of this study is your experiences with variables that may impact on-time graduation at the high school in which you are currently employed.

If you agree to participate in this study, you will be asked to take an online survey that will take approximately 15 minutes to complete. The researcher will be analyzing the survey results submitted at the conclusion of the survey window.

Your participation in this project is voluntary and your identity will be kept anonymous at all times. Even after you sign the informed consent document, you may decide to leave the study at any time without penalty or loss of benefits to which you may otherwise be entitled. You will not be identified in any reports on this study. Records will be kept confidential to the extent provided by federal, state, and local law. However, the Institutional Review Board, the sponsor of the study (if applicable, i.e., NIH, FDA, etc.), or university and government officials responsible for

monitoring this study may inspect these records. All data collected, including survey responses, will be kept confidential. Hard copies of these materials will be kept in a locked file cabinet in a locked office, and digital data will be kept on a password protected computer. All participants will remain anonymous throughout the research and may be given a pseudonym for the purpose of analysis and/or reporting.

This project is deemed as no more than minimal risk. The study team does not foresee or anticipate any risk greater than that encountered in your routine daily activities.

While direct benefits of participation may not be recognizable, we believe that allowing teachers to reflect on their experiences, perceptions, and understandings of their experiences can be of great personal satisfaction and might lend to insight as to how to improve on-time graduation rates for students. You will not be asked to miss your teaching for any part of participation in this study. All data collection will be completed at your convenience.

If you agree to participate, ***please click the button in the survey to give consent in participating in data collection that will contribute to this study.*** Please note that your decision to refrain from participation in one component of the study does not preclude you from participating in the other components.

If you have questions about the study, such as scientific issues, your role in this study, or any part of the study; or would like to obtain more information or offer input, please contact, Dr. Bonnie Beyer, C21 Fairlane Center South, 19000 Hubbard Drive, Dearborn, MI 48126, (313) 593-5583, beyer@umich.edu or Megan Papasian-Broadwell, doctoral candidate, 4410 Chicago Road, Warren, MI 48092, (586) 202-3496, mpapasia@umich.edu Should you have questions regarding your rights as a research participant, or wish to obtain information, ask questions, or discuss with someone other than the researcher(s), please contact the Institutional Review Board, (313) 593-5468, email: DBN-Research@umich.edu

Thank you,

Megan Papasian-Broadwell, University of Michigan-Dearborn Doctoral Candidate, Principal Investigator

Bonnie Beyer, Ed.D., University of Michigan-Dearborn, Faculty Advisor College of Education, Health and Human Services Department of Education

APPROVED UNIVERSITY OF MICHIGAN-DEARBORN IRB- EXEMPT- IRB

#HUM00179577

On-Time Graduation Rates in a Suburban Secondary School: A Mixed Methods Study

Examining Factors that Impact Student Academic Achievement and Graduation

Appendix B

Teacher Survey

On-Time Graduation Rates in a Suburban Secondary School: A Mixed Methods Study Examining Factors that Impact Student Academic Achievement and Graduation

Survey Directions:

Thank you for participating in this survey, which will take approximately 15 minutes to answer. Please be sure to answer all questions to the best of your ability. There are no right or wrong answers.

1. Please indicate ALL high school grade levels you have taught during your tenure with this school district.

9th Grade

10th Grade

11th Grade

12th Grade

2. Please indicate ALL academic subjects you have taught during your tenure with this school district.

ELA

Mathematics

Science

Social Studies

Foreign Language

Visual/Performing Arts

Physical Education/Health

Special Education

3. Please indicate the number of years you have taught at this school.

0-2 years

3-5 years

6-8 years

9 or more years

Please rate your level of agreement with the following statements:

4. Does student on-track attendance (10 or less absences per semester) impact on-time graduation?

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

5. Does student participation in extracurricular activities have a positive impact on on-time graduation for students?

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

6. Does membership in a dual sub-group impact on-time graduation for students?

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

7. Does state assessment proficiency predict on-time graduation for 9th grade students?

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

Not applicable

8. Does state assessment proficiency predict on-time graduation for 10th grade students?

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

Not applicable

9. Does state assessments proficiency predict on-time graduation for 11th grade students?

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

Not applicable

10. Does School of Choice enrollment impact on-time graduation?

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

11. Does In School Suspension impact on-time graduation for students?

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

12. Does Out of School Suspension impact on-time graduation for students?

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

12. Does Expulsion impact on-time graduation for students?

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

13. Does credit earned in 9th grade English Language Arts impact on-time graduation for students?

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

14. Does credit earned in 9th grade Mathematics impact on-time graduation for students?

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

15. Does a student's family impact on-time graduation?

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

16. Does a student's peer group impact on-time graduation?

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

17. Does a student's cultural group impact on-time graduation?

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

18. Does a student's transportation impact on-time graduation?

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

19. Does the local economy impact on-time graduation?

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

20. Does a student's overall safety impact on-time graduation?

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

21. What do you feel is the greatest barrier to on-time graduation for your students?
